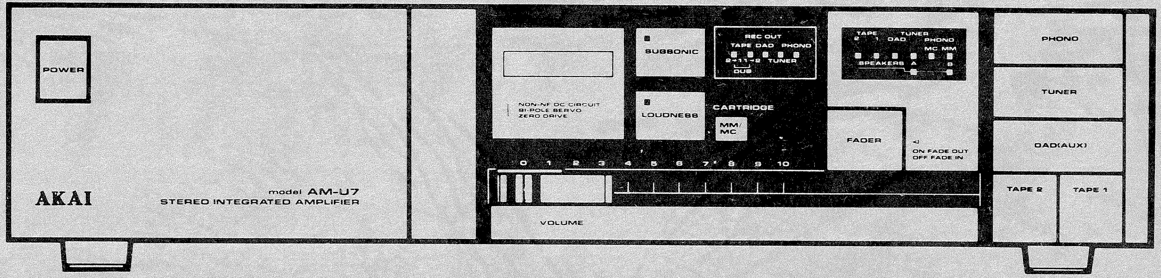
AKAI SERVICE MANUAL

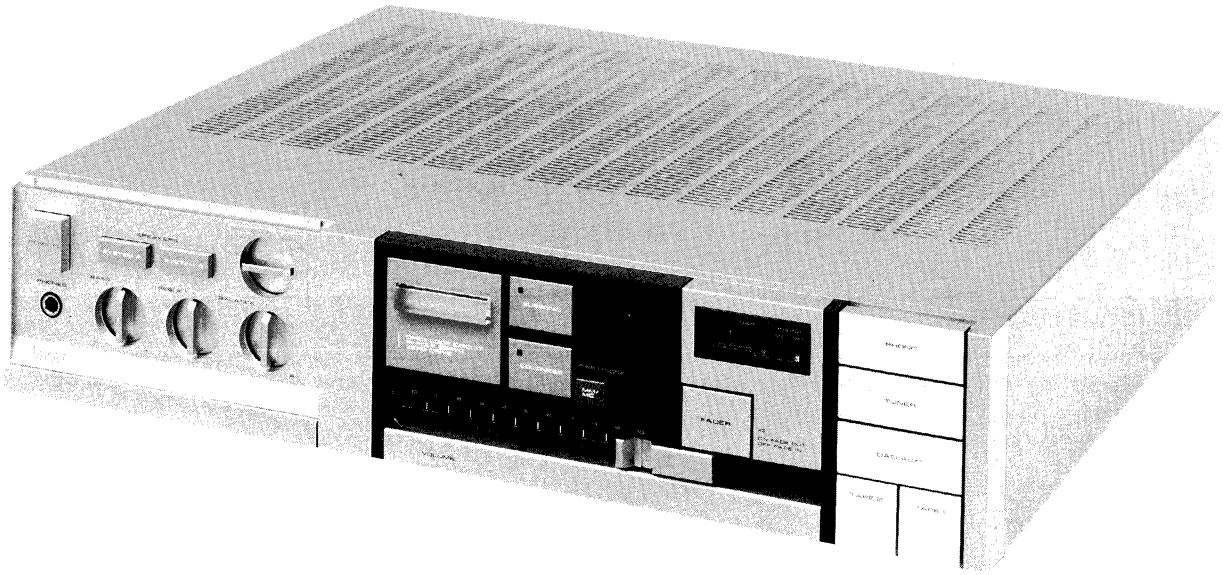

POWER
AKAI
model AM-U7
STEREO INTEGRATED AMPLIFIER
NON-NF DC CIRCUIT
BI-POLE SERVO
ZERO DRIVE
SUBSONIC
LOUDNESS
REC OUT
TAPE DAD PHONO
2→1 1→2 TUNER
DUB
CARTRIDGE
MM/MC
TAPE
2 1 DAD
TUNER
PHONO
MC MM
SPEAKERS A B
FADER
ON FADE OUT
OFF FADE IN
0 1 2 3 4 5 6 7 8 9 10
VOLUME
PHONO
TUNER
DAD(AUX)
TAPE 2
TAPE 1

STEREO INTEGRATED AMPLIFIER

MODEL AM-U7

ABBREVIATIONS FOR SERVICE MANUAL
MODEL AM-U7

ABBREVIATION	EXPLANATION
AC	Alternating Current
AUX	AUXiliary
DAD	Digital Audio Disc
DC	Direct Current
DET	DETector
EQ	EQualizer
GND	GrouND
H	High
I-Amp	I (current) Amplifier
INV	INVerter
L	Low
MC	Moving Coil (cartridge)
MM	Moving Magnet (cartridge)
RL	ReLay
SW	SWitch
TP	Test Point
TR	TRansistor
V-Amp	Voltage Amplifier



STEREO INTEGRATED AMPLIFIER

MODEL AM-U7

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SECTION 2 PARTS LIST 21
SECTION 3 SCHEMATIC DIAGRAM 29

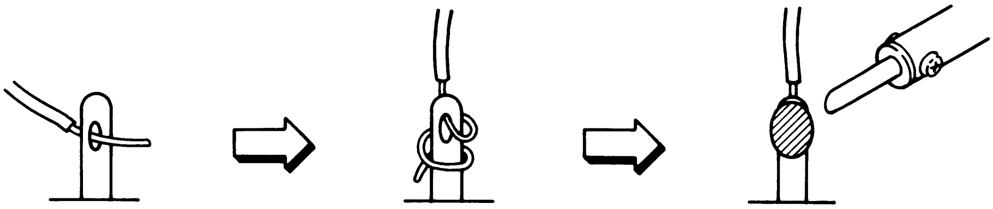
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

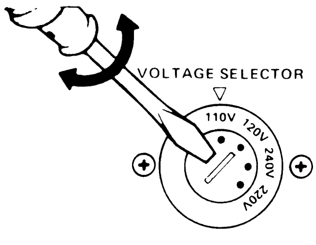
Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\boxed{C}$ or $\boxed{A}$, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks. line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
10. Voltage Conversion
    Models for Canada, USA, Europe, UK and Australia are not equipped with this facility. Each machine is preset at the factory according to its destination, but some machines can be set to 110V, 120V, 220V or 240V as required.
    If your machines voltage can be converted:
    1) Disconnect the power cord.
    2) Turn the VOLTAGE SELECTOR located on the rear panel with a screwdriver until the correct voltage is indicated.



SECTION 1

SERVICE MANUAL

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  7-2 COMPOSITION OF VARIOUS P.C BOARD 15

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

POWER AMPLIFIER SECTION

RATED POWER OUTPUT (2 channels Driven)	8 ohms	4 ohms
20 to 20,000 Hz	80W x 2/0.5%	80W x 2/0.5%
1 kHz	90W x 2/0.5%	100W x 2/0.7%
MUSIC POWER	190W x 2	
SIGNAL TO NOISE RATIO (IHF-A)		
PHONO	MC: 65 dB	MM: 88 dB
AUX	100 dB	
RESIDUAL NOISE (8 ohms)	0.2 mV	
CHANNEL SEPARATION (IHF, 1 kHz)	65 dB (PHONO)	
DAMPING FACTOR (1 kHz, 8 ohms)	30	
OUTPUT IMPEDANCE SPEAKERS	4 to 16 ohms (A or B) 8 to 16 ohms (A and B)	

PRE AMPLIFIER SECTION

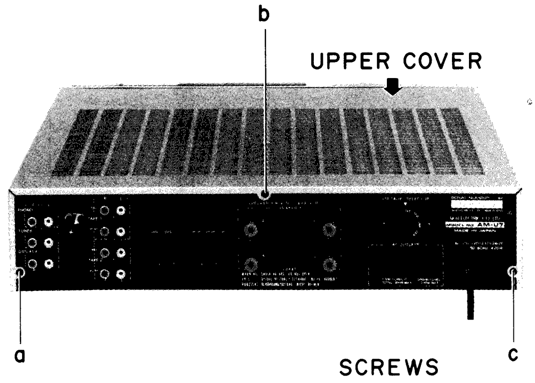
INPUT SENSITIVITY/IMPEDANCE	
PHONO	MC: 0.25 mV/100 ohms MM: 2.5 mV/47 kohms
AUX	150 mV/47 kohms
TUNER	150 mV/47 kohms
TAPE	150 mV/47 kohms
OUTPUT LEVEL/IMPEDANCE	
TAPE REC	150 mV/1 kohm
FREQUENCY RESPONSE	
PHONO (RIAA deviation)	20 Hz to 20 kHz (±0.2 dB)
TUNER/AUX/TAPE	5 Hz to 100 kHz (−2 dB)
TONE CONTROL	
BASS	±8 dB/100 Hz
TREBLE	±8 dB/10 kHz
LOUDNESS CONTROL (Volume set at −30 dB position)	+10 dB/100 Hz +6 dB/10 kHz
SUBSONIC FILTER	−3 dB/oct at 18 Hz
PHONO MAX. INPUT LEVEL (1 kHz)	MC: 25 mV MM: 250 mV
POWER REQUIREMENT	120V, 60 Hz for USA and Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK and Australia 110V/120V/220V/240V, 50/60 Hz switchable for other countries.
POWER CONSUMPTION	420W (U), 440W (A), 490VA (C), 650W (B,S), 300W (E)
DIMENSIONS	440(W) x 105(H) x 265(D) mm (17.3 x 4.1 x 14.4 inches)
WEIGHT	9.3 kg (20.5 lbs)

*** For improvement purposes, specifications and design are subject to change without notice.**

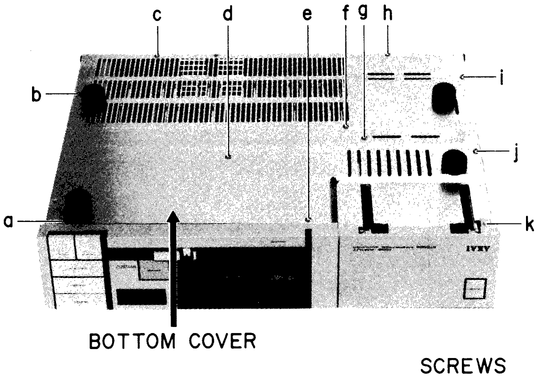
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

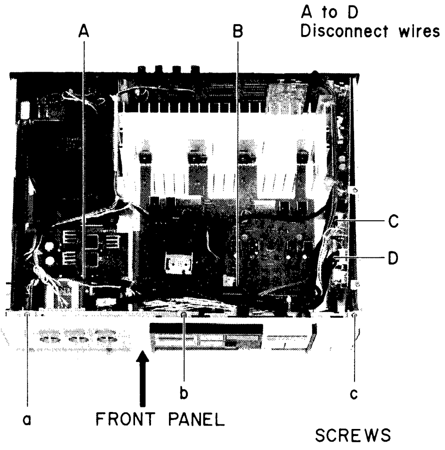
1


b
UPPER COVER
a
SCREWS
c

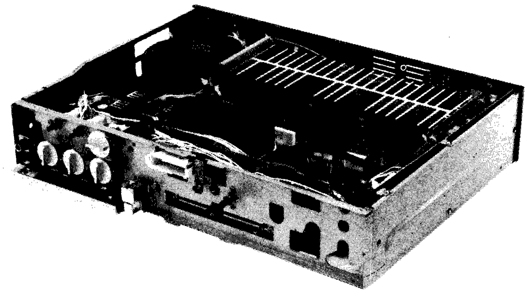
2


c
d
e
f
g
h
i
b
j
a
k
BOTTOM COVER
SCREWS

3


A to D
Disconnect wires
A
B
C
D
b
c
a
FRONT PANEL
SCREWS

4



III. CONTROLS

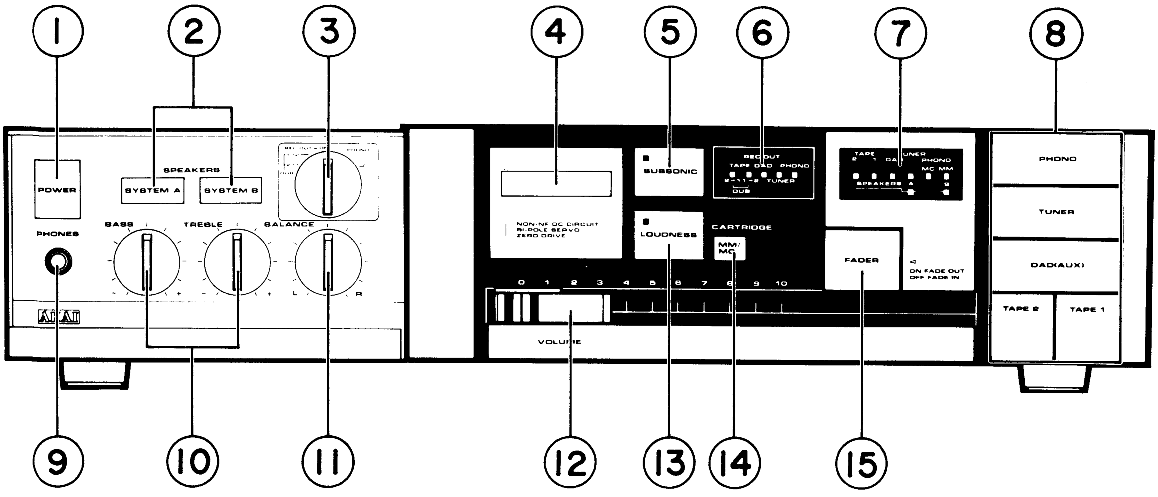

1
2
3
4
5
6
7
8
POWER
PHONES
SPEAKERS
SYSTEM A
SYSTEM B
BASS
TREBLE
BALANCE
L
R
AKAI
NON-NF DC CIRCUIT
BI-POLE SERVO
ZERO DRIVE
SUBSONIC
LOUDNESS
REC OUT
TAPE DAD PHONO
TUNER
DUB
CARTRIDGE
MM/MC
TAPE
DAD
TUNER
PHONO
MC MM
SPEAKERS A B
FADER
ON FADE OUT
OFF FADE IN
0 1 2 3 4 5 6 7 8 9 10
VOLUME
PHONO
TUNER
DAD(AUX)
TAPE 2
TAPE 1
9
10
11
12
13
14
15

Fig. 3-1 Front View

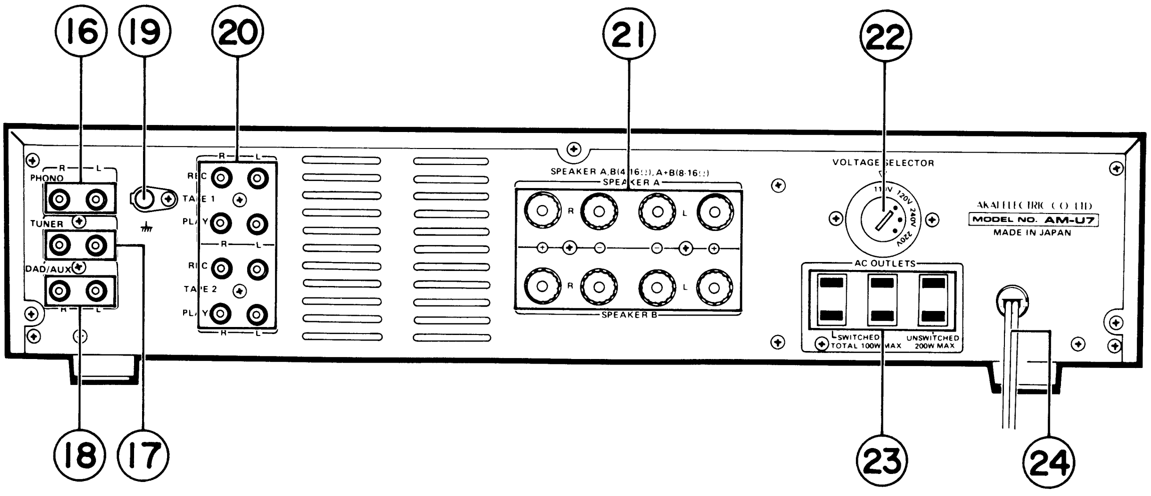

16
19
20
21
22
R
L
PHONO
TUNER
DAD/AUX
REC
TAPE 1
PLAY
TAPE 2
SPEAKER A,B(4–16Ω),A+B(8–16Ω)
SPEAKER A
SPEAKER B
VOLTAGE SELECTOR
110V
120V
220V
240V
AC OUTLETS
SWITCHED
TOTAL 100W MAX
UNSWITCHED
200W MAX
AKAI ELECTRIC CO LTD
MODEL NO. AM-U7
MADE IN JAPAN
18
17
23
24

Fig. 3-2 Rear View

1. POWER SWITCH
2. SPEAKER SELECTORS (A and B)
3. REC OUT SELECTOR
4. LINE STRAIGHT SWITCH with INDICATOR
5. SUBSONIC FILTER SWITCH with INDICATOR
6. REC OUT INDICATORS
7. INPUT, CARTRIDGE and SPEAKER INDICATORS
8. INPUT SOURCE SELECTORS
   (PHONO, TUNER, DAD/AUX, TAPE 1 and TAPE 2)
9. HEADPHONE JACK
10. TONE CONTROLS (BASS and TREBLE)
11. BALANCE CONTROL
12. VOLUME CONTROL
13. LOUDNESS SWITCH and INDICATOR
14. CARTRIDGE SELECTOR (MC ■ /MM ▬)
15. FADER BUTTON
16. PHONO JACKS
17. TUNER JACKS
18. DAD/AUX JACKS
19. GROUND TERMINAL
20. TAPE (1 and 2) JACKS
21. SPEAKER TERMINALS (A and B)
22. VOLTAGE SELECTOR ($\boxed{\text{U}}$ model only)
23. AC OUTLETS (Not on some models)
24. AC POWER CORD

IV. PRINCIPAL PARTS LOCATION

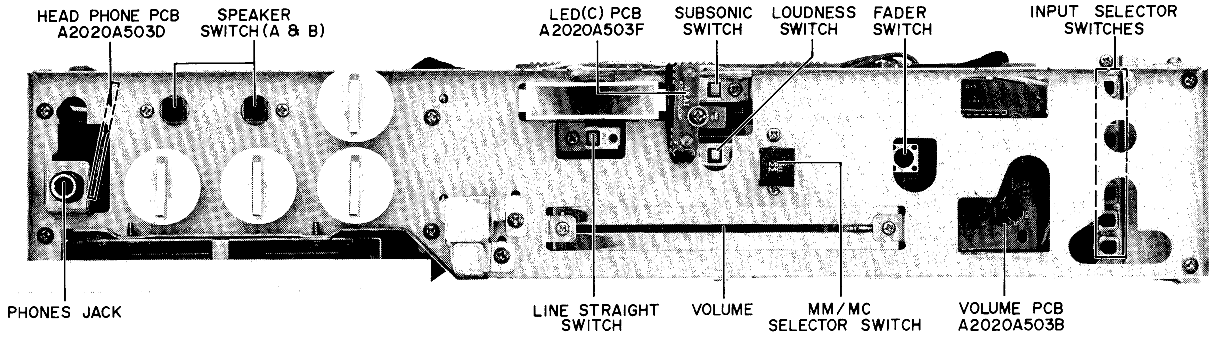

HEAD PHONE PCB
A2020A503D
SPEAKER
SWITCH (A & B)
LED(C) PCB
A2020A503F
SUBSONIC
SWITCH
LOUDNESS
SWITCH
FADER
SWITCH
INPUT SELECTOR
SWITCHES
PHONES JACK
LINE STRAIGHT
SWITCH
VOLUME
MM/MC
SELECTOR SWITCH
VOLUME PCB
A2020A503B

Fig. 4-1 Front View

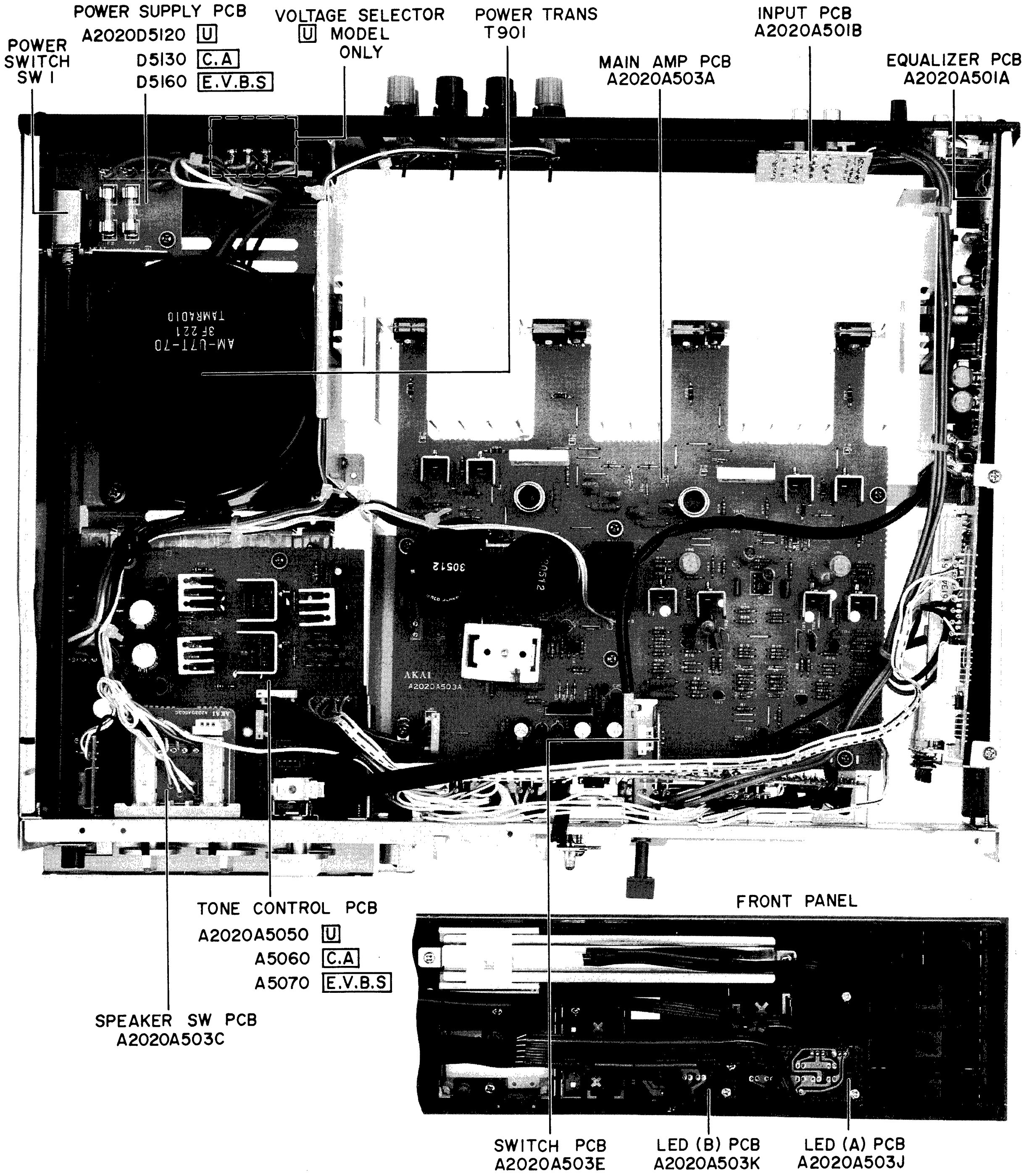

POWER
SWITCH
SW 1
POWER SUPPLY PCB
A2020D5120 U
D5130 C.A
D5160 E.V.B.S
VOLTAGE SELECTOR
U MODEL
ONLY
POWER TRANS
T901
MAIN AMP PCB
A2020A503A
INPUT PCB
A2020A501B
EQUALIZER PCB
A2020A501A
TONE CONTROL PCB
A2020A5050 U
A5060 C.A
A5070 E.V.B.S
SPEAKER SW PCB
A2020A503C
FRONT PANEL
SWITCH PCB
A2020A503E
LED (B) PCB
A2020A503K
LED (A) PCB
A2020A503J

Fig. 4-2 Top View

V. DESCRIPTION OF CIRCUIT

5-1 FADER

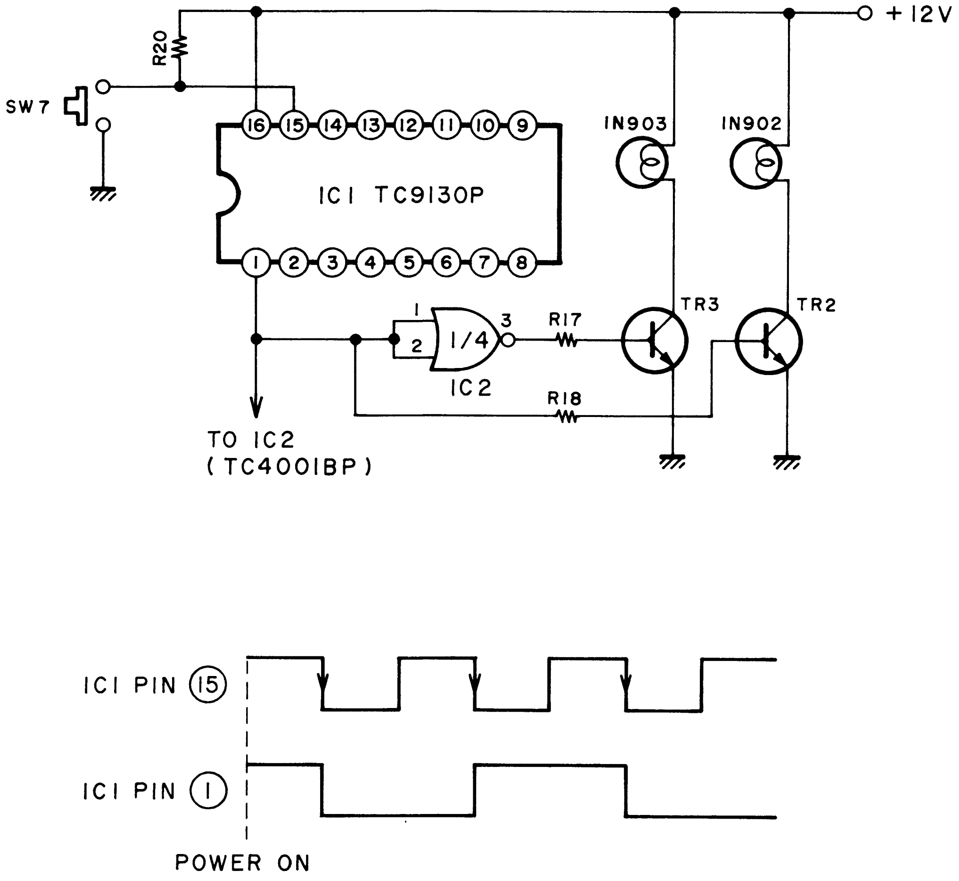

+12V
R20
SW7
16
15
14
13
12
11
10
9
IC1 TC9130P
1
2
3
4
5
6
7
8
IN903
IN902
TR3
TR2
1
2
1/4
3
IC2
R17
R18
TO IC2
(TC4001BP)
IC1 PIN ⑮
IC1 PIN ①
POWER ON

Fig. 5-1

When the tactile switch (SW7) is pushed, the IC1 (TC9130P) input pin ⑮ will detect falling edges, and the IC1 (TC9130P) output pin ① will repeat attaining "L" and "H" levels alternately.

With the fader "on", the IC1 (TC9130P) output pin ① will attain an "L" level and the IC2 (TC4001BP) pin ③ output an "H" level, as a result of which TR3 will turn on and the fade-out indicator lamp (IN903) light up. With the fader "off", since the IC1 (TC9130P) output pin ① is at an "H" level, TR3 will turn off and TR2 on, as a result of which the fade-in indicator lamp (IN902) will light up.

5-2 FADE IN AND FADE OUT

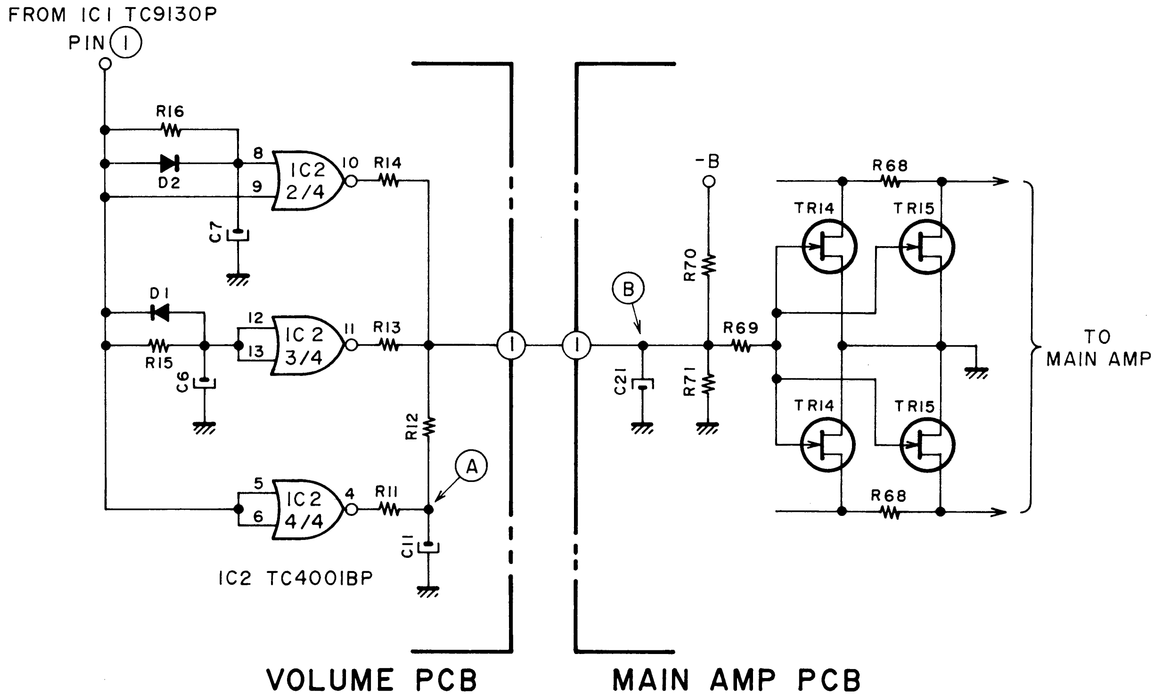

FROM IC1 TC9130P
PIN ①
R16
D2
8
9
IC2 2/4
10
R14
C7
D1
12
13
IC2 3/4
11
R13
R15
C6
R12
A
5
6
IC2 4/4
4
R11
C11
IC2 TC4001BP
①
①
B
C21
-B
R70
R69
R71
R68
TR14
TR15
TR14
TR15
R68
TO MAIN AMP
VOLUME PCB
MAIN AMP PCB

Fig. 5-2

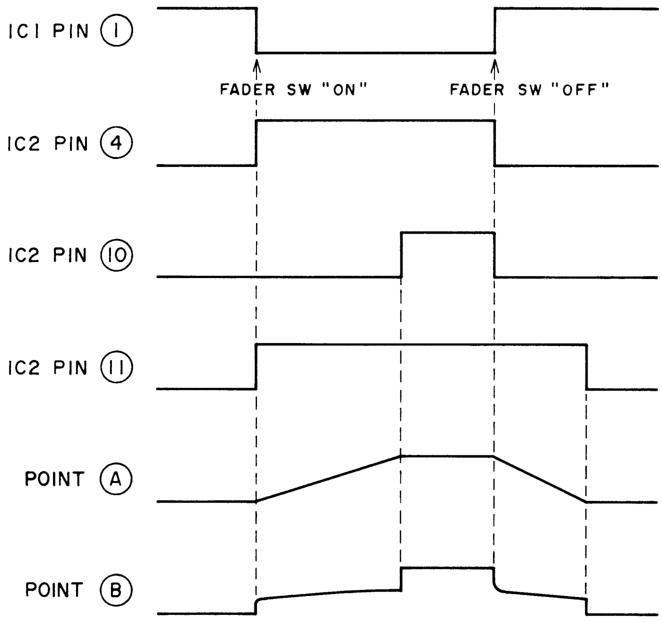


Fig. 5-3

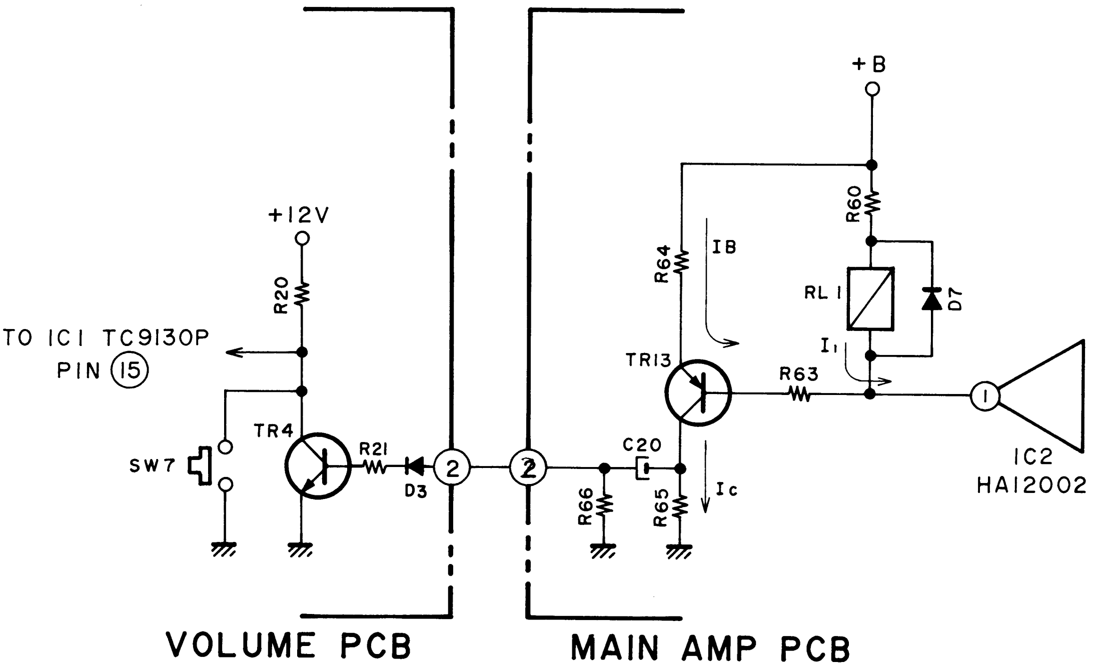
1) FADE IN

When an "H" level is output by IC1 (TC9130P) pin ①, IC2 (TC4001BP) pin ④ will attain an "L" level, after which IC2 (TC4001BP) pin ⑩ will attain an "L" level, and lastly, IC2 (TC4001BP) pin ⑪ will attain an "L" level. C11 and C21 will then slowly discharge, drawing the TR14 and TR15 gates toward −B, and TR14 and TR15 will slowly turn off.

2) FADE OUT

When an "L" level is output by IC1 (TC9130P) pin ①, IC2 (TC4001BP) pins ④ and ⑪ will attain "H" levels, slowly raising the TR14 and TR15 gate voltages, and ultimately IC2 (TC4001BP) pin ⑩ will attain an "H" level, at which time, the TR14 and TR15 voltages will reach the levels set in advance.

5-3 FADE-IN/OUT WHEN RELAY IS ON:



+B
R60
RL 1
D7
I1
R63
R64
IB
TR13
+12V
R20
TO IC1 TC9130P
PIN ⑮
TR4
SW7
R21
D3
2
2
C20
R66
R65
Ic
1
IC2
HA12002
VOLUME PCB
MAIN AMP PCB

Fig. 5-4

When relay (RL1) is off, TR13 will not turn on, and since the TR13 collector is at an "L" level, TR4 will not turn on either. When relay (RL1) is on, the TR3 base will attain an "L" level, and TR13 will turn on. When TR13 turns on, a collector current will flow, and by the voltage drop across R65, a voltage will be applied to the TR4 base. Accordingly, TR4 will turn on, exerting the same effect as when the tactile switch (SW7) has been pushed, and the fader will operate.

5-4 ZERO DRIVE

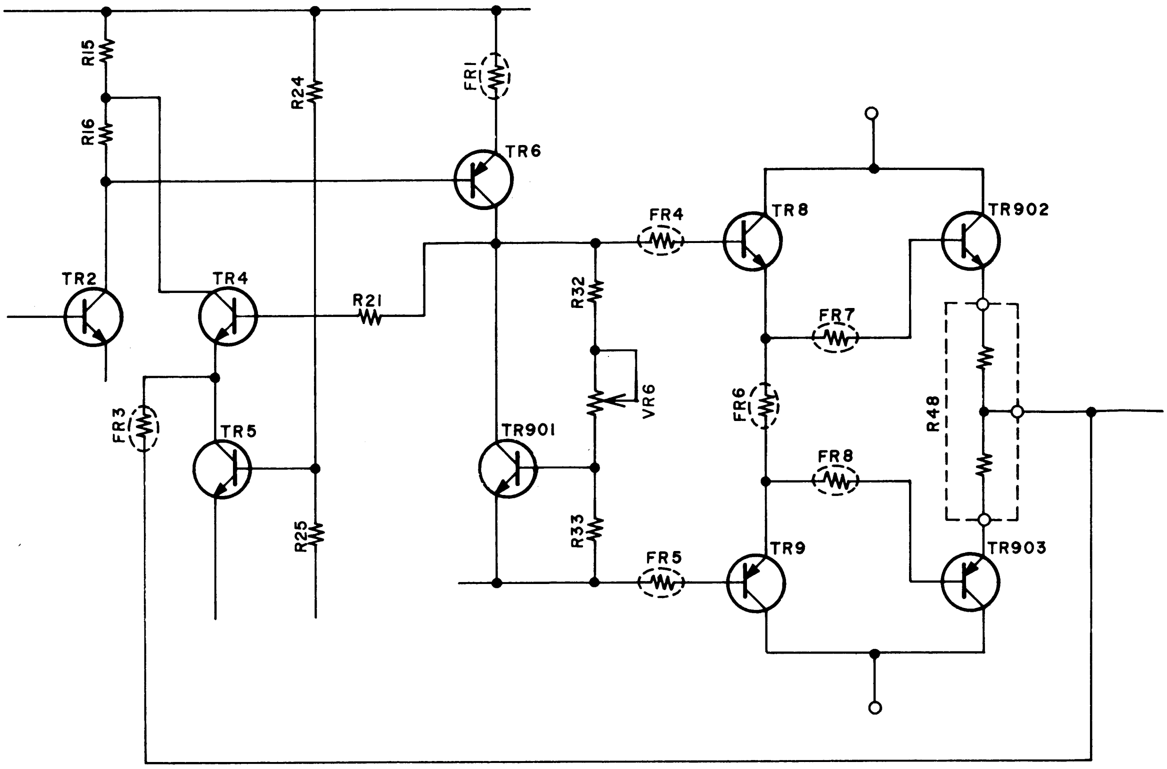

R15
R16
R24
FR1
TR6
TR2
TR4
R21
FR3
TR5
R25
TR901
R32
VR6
R33
FR4
FR5
TR8
TR9
FR6
FR7
FR8
TR902
TR903
R48

Fig. 5-5

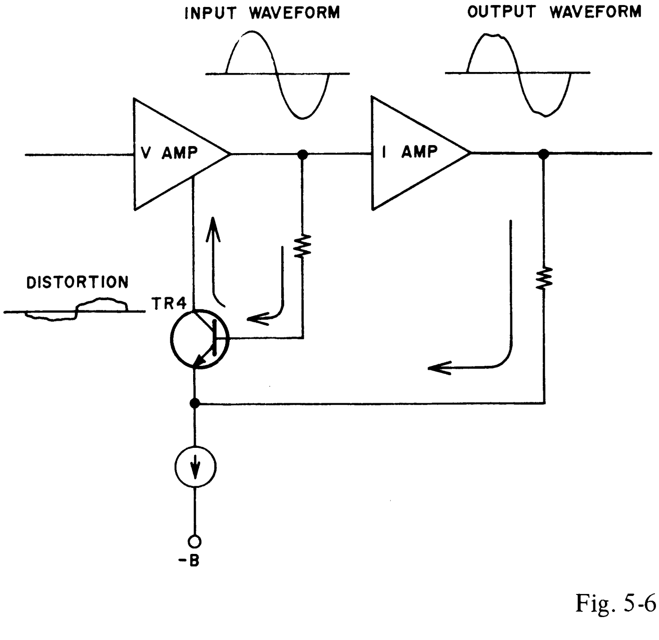

INPUT WAVEFORM
OUTPUT WAVEFORM
V AMP
I AMP
DISTORTION
TR4
-B

Fig. 5-6

This is intended to reduce distortions in the current amplifier stage. Voltage differences (distortion components) between the current amplifier stage (I Amp) input (TR8) and the main amp output (R48) when signals have been input, are detected with TR4, and signals will be applied to the voltage amplifier stage loads (R15 and R16) in a manner to cancel off the distortion components detected.

5-5 OVERCURRENT DETECTING CIRCUIT:

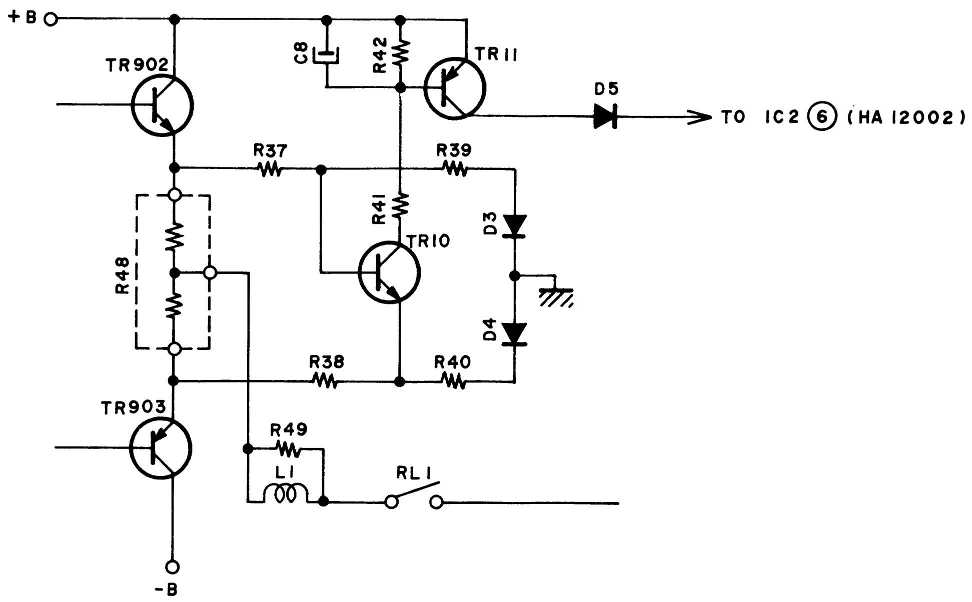

+B
TR902
C8
R42
TR11
D5
TO IC2 ⑥ (HA 12002)
R37
R39
R41
D3
TR10
R48
D4
R38
R40
TR903
R49
L1
RL1
-B

Fig. 5-7

Relay (RL1) is turned off for the protection of transistors against destruction and internal temperature rises, in the event that the load is shorted or the load impedance has dropped, causing an excessive current to flow. The voltage drop across R48 upon the flowing of an overcurrent turns TR10 on. Then, the TR11 base will be drawn to the ground potential, turning TR11 on. This draws the TR11 collector toward +B, and will activate the IC2 (HA12002) overcurrent detection, turning off relay (RL1). In this case, the relay (RL1) will not be reset until after the power switch has been pushed off at least once.

VI. ADJUSTMENTS

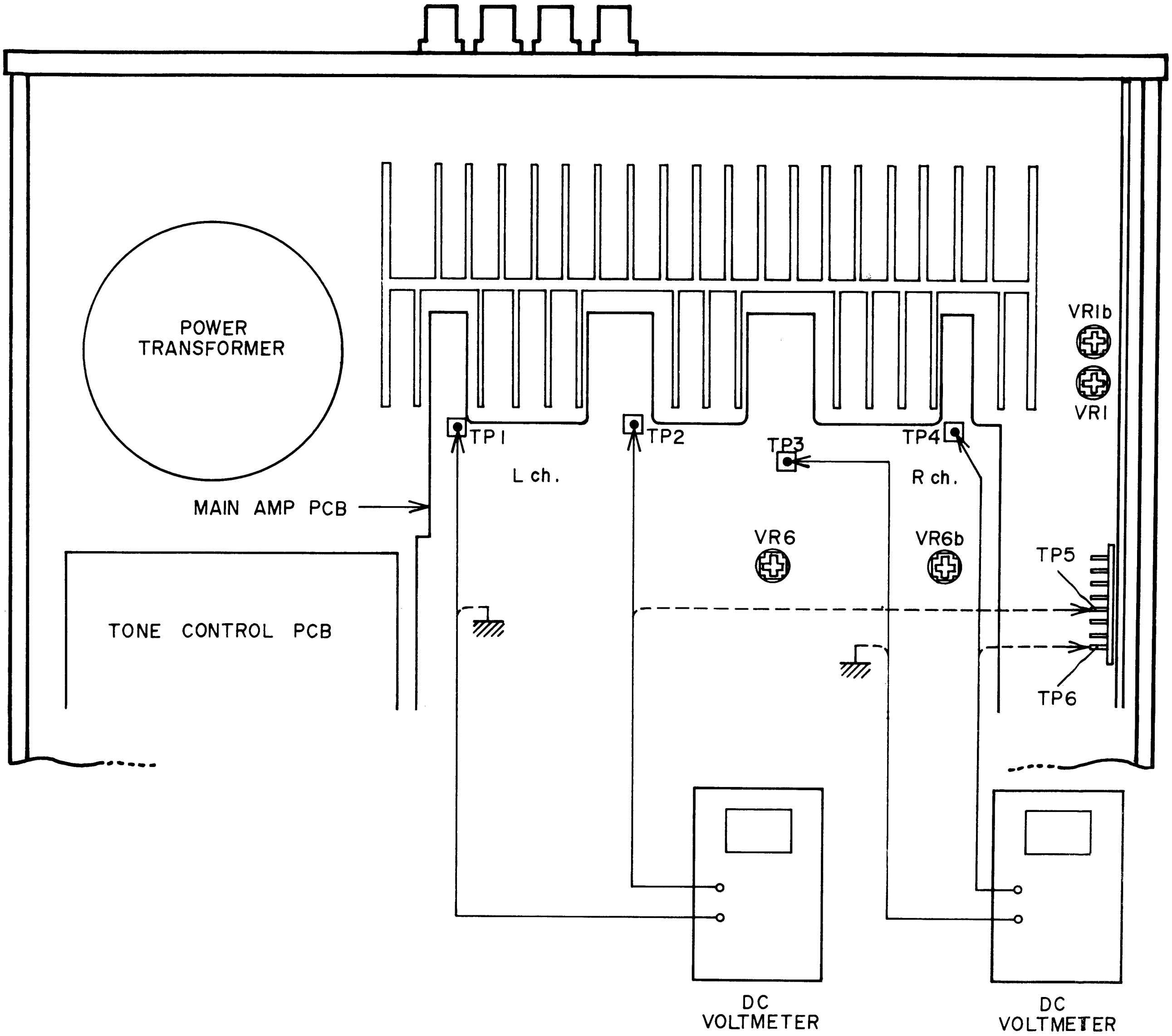

POWER TRANSFORMER
MAIN AMP PCB
TONE CONTROL PCB
TP1
TP2
TP3
TP4
L ch.
R ch.
VR6
VR6b
VR1b
VR1
TP5
TP6
DC VOLTMETER
DC VOLTMETER

Fig. 6-1 Adjustment Points

6-1 IDLING CURRENT ADJUSTMENT

After power switch is "ON", connect the DC Voltmeter to the Test points as shown Fig. 6-1.
Adjust VR6 (left channel), VR6b (right channel) so that the DC Voltmeter Reading is 8 mV ± 2 mV.

6-2 EQ AMP DC BALANCE ADJUSTMENT

Function switch to PHONO (MC Range), Connect DC Voltmeter between TP5 (left channel), or TP6 (right channel) and GND, as shown Fig. 6-1 (Broken line).
Adjust VR1 (left channel), VR1b (right channel) so that DC Voltmeter Reading is DC 0V ± 1 mV.

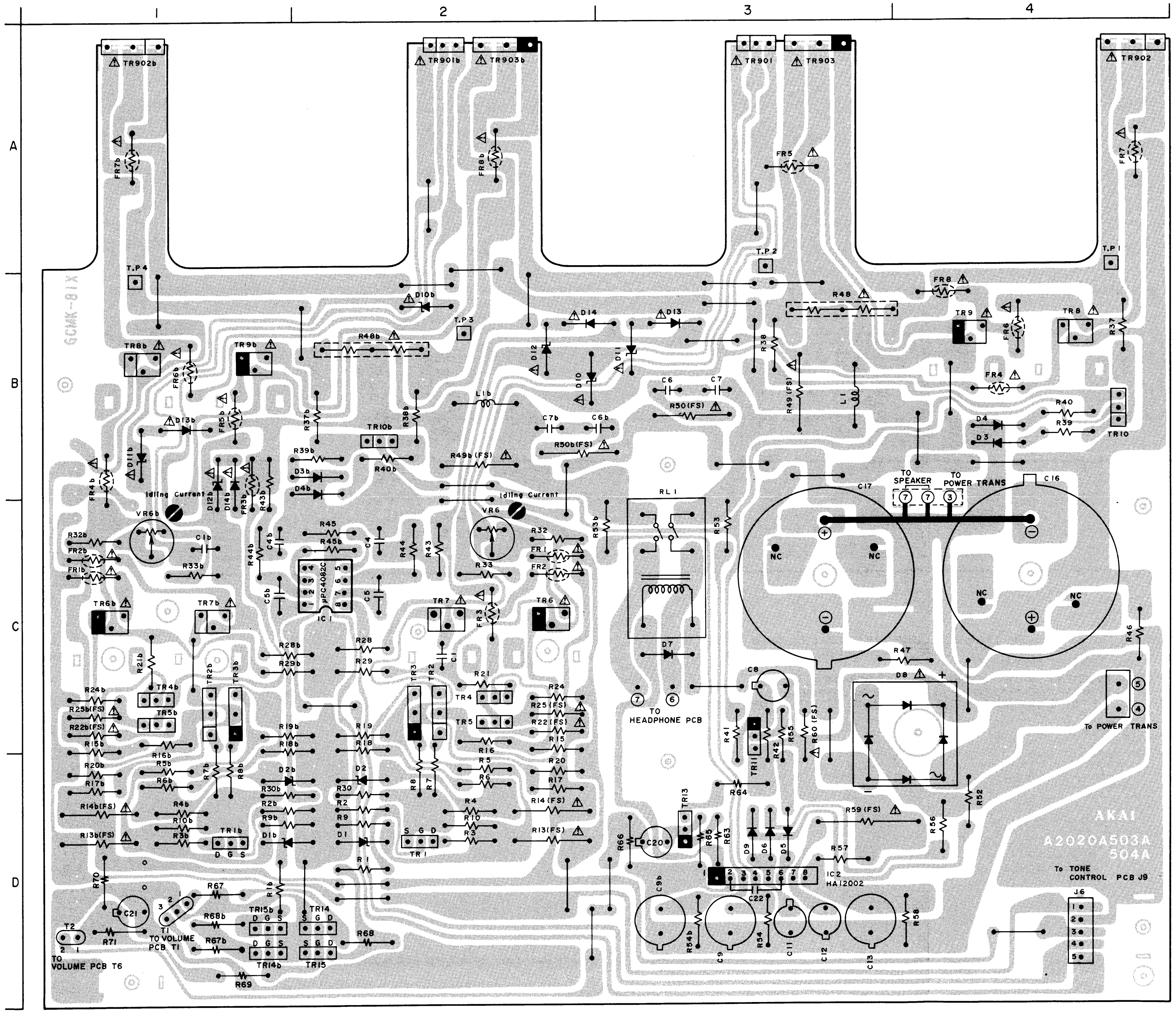
VII. CLASSIFICATION OF VARIOUS P.C BOARDS

7-1 P.C BOARD TITLE AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number	Notes
MAIN AMP P.C BOARD	A2020A503A	
VOLUME P.C BOARD	A2020A503B	
SPEAKER SW P.C BOARD	A2020A503C	
HEAD PHONE P.C BOARD	A2020A503D	
SWITCH P.C BOARD	A2020A503E	
LED (C) P.C BOARD	A2020A503F	
LED (A) P.C BOARD	A2020A503J	
LED (B) P.C BOARD	A2020A503K	
TONE CONTROL P.C BOARD	A2020A5050	U
TONE CONTROL P.C BOARD	A2020A5060	C, A
TONE CONTROL P.C BOARD	A2020A5070	E, V, B, S
EQUALIZER P.C BOARD	A2020A501A	
INPUT P.C BOARD	A2020A501B	
POWER SUPPLY P.C BOARD	A2020D5120	U
POWER SUPPLY P.C BOARD	A2020D5130	C, A
POWER SUPPLY P.C BOARD	A2020D5160	E, V, B, S
TERMINAL P.C BOARD	A2018D5070	V Model only

2. COMPOSITION OF VARIOUS P.C BOARDS

1) MAIN AMP P.C BOARD A2020A503A and VOLUME P.C BOARD A2020A503B


1
2
3
4
A
B
C
D
TR902b
TR901b
TR903b
TR901
TR903
TR902
FR7b
FR8b
FR5
FR7
T.P4
T.P2
T.P3
T.P1
D10b
D14
D13
R48b
R48
FR8
TR8b
TR9b
TR9
TR8
FR6b
FR6
R37
R38
D12
D11
D10
R49(FS)
L1
FR4
C6
C7
R50(FS)
L1b
C7b
C6b
R50b(FS)
D13b
FR5b
R37b
TR10b
R38b
R39b
R40b
D3b
D4b
R49b(FS)
D4
D3
R40
R39
TR10
D11b
FR4b
Idling Current
D12b
D14b
FR3b
R43b
VR6b
VR6
Idling Current
RL1
R53b
R53
C17
TO SPEAKER
TO POWER TRANS
C16
NC
R32b
FR2b
FR1b
C1b
R33b
R44b
C4b
R45
R45b
C4
R44
R43
R32
FR1
FR2
R33
C5b
IC1
μPC4082C
C5
TR6b
TR7b
TR7
FR3
TR6
C1
D7
R47
R46
R21b
TR4b
TR2b
TR3b
R28b
R29b
R28
R29
TR3
TR2
R21
TR4
C8
D8
R24b
R25b(FS)
R22b(FS)
TR5b
R24
R25(FS)
R22(FS)
TO HEADPHONE PCB
To POWER TRANS
R15b
R16b
R5b
R7b
R8b
R19b
R18b
R19
R18
TR5
R16
R15
R20
R17
R41
TR11
R42
R55
R50(FS)
R20b
R17b
R6b
R4b
R10b
R3b
R14b(FS)
R13b(FS)
D2b
R30b
R2b
R9b
D1b
R30
D2
R2
R9
D1
R8
R7
R5
R6
R4
R10
R3
R14(FS)
R13(FS)
R64
TR13
R59(FS)
R52
R56
R57
AKAI
A2020A503A
504A
To TONE CONTROL PCB J9
TR1b
D G S
TR1
S G D
R1
R66
C20
R65
R63
D9
D6
D5
IC2
HA12002
J6
R70
C21
R67
R68b
R67b
T1
TO VOLUME PCB T1
T2
TO VOLUME PCB T6
R71
TR15b
TR14b
TR14
TR15
R68
R69
R16
C9b
C22
R54b
C9
R54
C11
C12
C13
R58
GCMK-01X

MAIN AMP PCB A2020A503A

LOCATION OF COMPONENTS

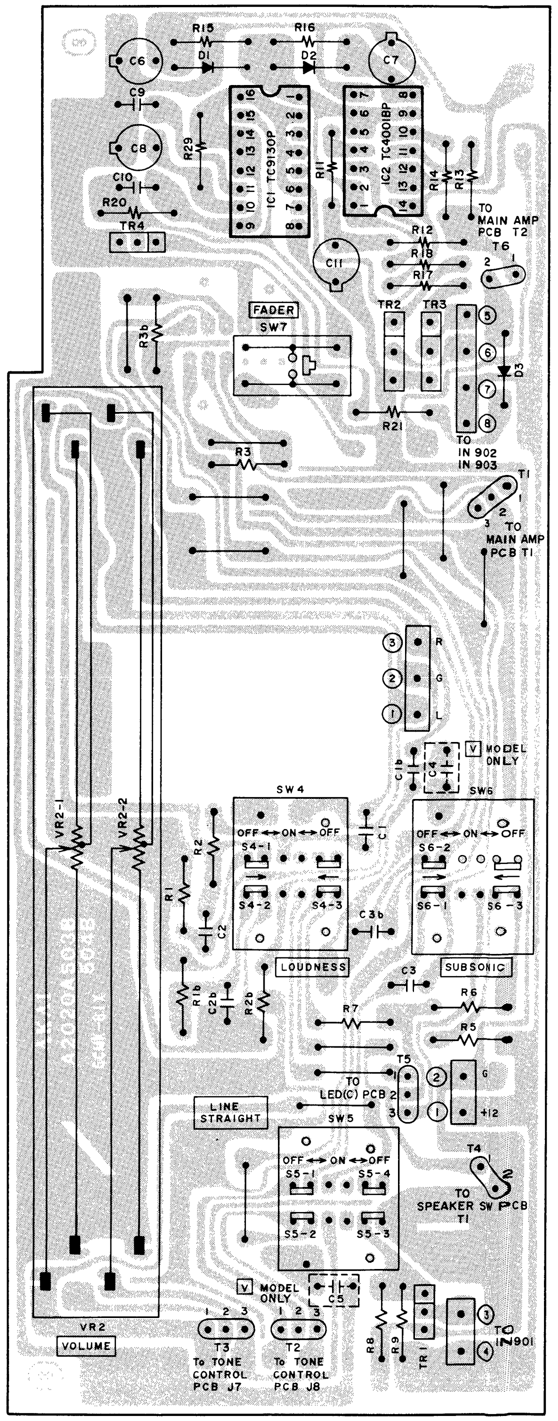
TR1........D2	TR1b.........D1
TR2 to 7...C2	TR2b to 7b...C1
TR8,9......B4	TR8b,9b......B1
TR10.......B4	TR10b........B2
TR11.......C3	TR901b.......A2
TR13.......D3	TR902........A1
TR901......A3	TR903........A2
TR902......A4	
TR903......A3	

IC
IC1.............C2
IC2.............D3

CONNECTOR
T1,T2...........D1
J6..............D4
3 , 4 , 5 , 7...C4
6 , 8 ....C3

● ● ● = NPN TRANSISTOR
■ ● ● = PNP TRANSISTOR

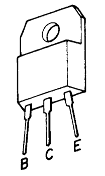
TR1,2,3...2SD467C(C)
TR4.......2SC536K-NP(E,F)


R15
R16
D1
D2
C6
C7
C9
C8
C10
R29
IC1 TC9130P
R11
IC2 TC4001BP
R14
R13
R20
TR4
TO MAIN AMP PCB T2
T6
R12
R18
R17
C11
FADER
SW7
TR2
TR3
R3b
R21
R3
TO IN 902 IN 903
T1
TO MAIN AMP PCB T1
R
G
L
C1b
C4
V MODEL ONLY
SW4
SW6
VR2-1
VR2-2
OFF ON OFF
S4-1
S4-2
S4-3
S6-2
S6-1
S6-3
R2
R1
C1
C2
C3b
C2b
R1b
R2b
LOUDNESS
C3
SUBSONIC
R6
R7
R5
A2020A503B 504B
TO LED(C) PCB
T5
+12
LINE STRAIGHT
SW5
S5-1
S5-4
S5-2
S5-3
T4
TO SPEAKER SW PCB T1
C5
VR2
VOLUME
T3
To TONE CONTROL PCB J7
To TONE CONTROL PCB J8
R8
R9
TR1
TO IN901

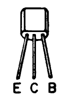
VOLUME PCB A2020A503B

TR1,TR14,TR15...FET 2SK117(Y)
TR2.............2SC2690(Q,P)
TR3.............2SA1220(Q,P)
TR4,TR5.........2SC2909(S,T)
TR6.............2SA1209(S,T)
TR7.............2SC2911(S,T)
TR8.............2SC3116(S,T)

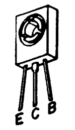
TR9.............2SA1248(S,T)
TR10............2SC2909(S,T)
TR11,TR13.......2SA1207(S,T)
TR901...........2SC3116(S,T)
TR902...........2SC2581(O,Y)
TR903...........2SA1106(O,Y)



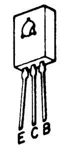
2SC2581
2SA1106



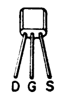
2SA1207
2SC2909



2SA1220
2SC2690



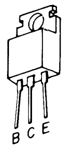
2SA1209
2SA1248
2SC2911
2SC3116



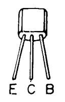
2SK117

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

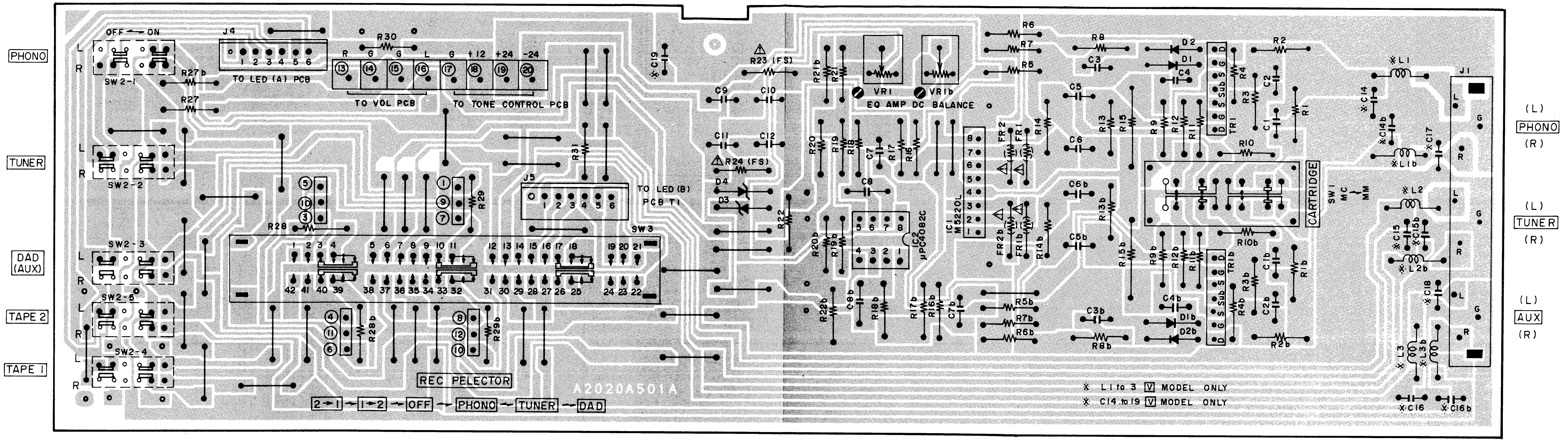


2SD467C



2SC536K-NP

2) EQUALIZER P.C BOARD A2020A501A

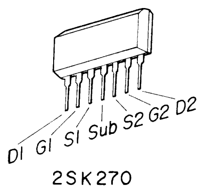

PHONO
TUNER
DAD (AUX)
TAPE 2
TAPE I
OFF ← ON
SW2-1
SW2-2
SW2-3
SW2-5
SW2-4
R27b
R27
J4
TO LED (A) PCB
R30
TO VOL PCB
TO TONE CONTROL PCB
R G G L G +12 +24 -24
R31
R28
R29
R28b
R29b
J5
TO LED (B) PCB T1
SW3
REC PELECTOR
2→1 — 1→2 — OFF — PHONO — TUNER — DAD
A2020A501A
C19
R23 (FS)
R24 (FS)
C9
C10
C11
C12
D3
D4
VR1
VR1b
EQ AMP DC BALANCE
IC1 M5220L
IC2 μPC4082C
FR1
FR2
FR1b
FR2b
CARTRIDGE
SW1 MC MM
J1
(L) PHONO (R)
(L) TUNER (R)
(L) AUX (R)
※ L1 to 3 V MODEL ONLY
※ C14 to 19 V MODEL ONLY

EQUALIZER PCB A2020A501A

TR1, 1b——2SK270(BL, V)

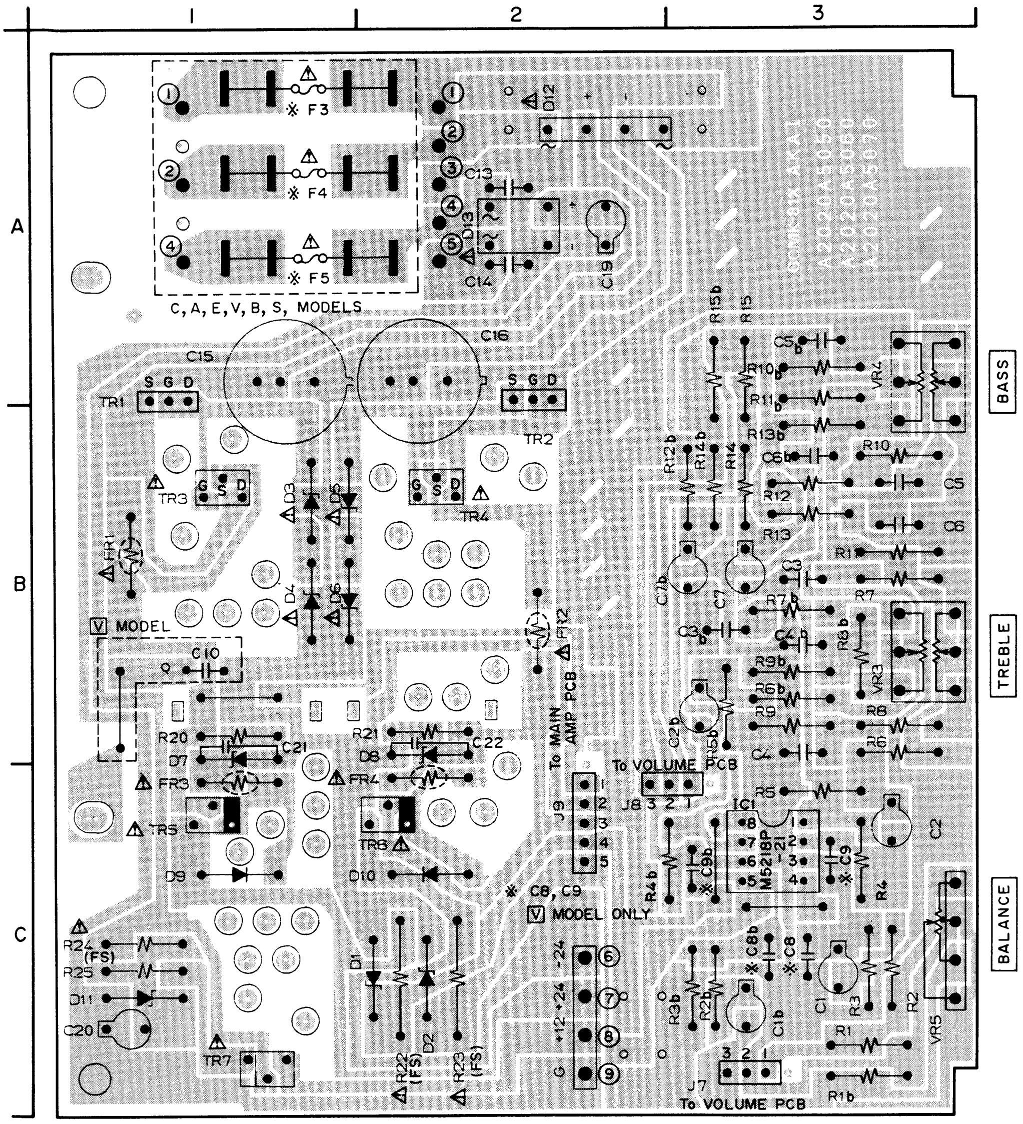
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


D1
G1
S1
Sub
S2
G2
D2

2SK270

3) TONE CONTROL P.C BOARD A2020A5050 U , A2020A5060 C, A and A2020A5070 E, V, B, S

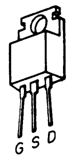

1
2
3
A
B
C
F3
F4
F5
※ F3
※ F4
※ F5
C, A, E, V, B, S, MODELS
D12
D13
C13
C14
C19
C15
C16
TR1
TR2
TR3
TR4
TR5
TR6
TR7
S G D
G S D
D3
D4
D5
D6
FR1
FR2
FR3
FR4
V MODEL
C10
R20
R21
D7
D8
C21
C22
D9
D10
To MAIN AMP PCB
To VOLUME PCB
J7
J8
J9
※ C8, C9
V MODEL ONLY
R24 (FS)
R25
D11
C20
D1
D2
R22 (FS)
R23 (FS)
+12 +24 -24
G
R15b
R15
C5b
R10b
R11b
R13b
VR4
R12b
R14b
R14
C6b
R10
C5
R12
C6
R13
R11
C7b
C7
C3
R7b
R7
C3b
C4b
R8b
VR3
R9b
R6b
C2b
R5b
R9
R8
C4
R6
R5
IC1
M5218P
C9b
R4b
C9
C2
R4
C8b
C8
R3b
R2b
C1b
C1
R3
R2
VR5
R1
R1b
BASS
TREBLE
BALANCE
AKAI
A2020A5050
A2020A5060
A2020A5070

TONE CONTROL PCB
A2020A5050 U
A2020A5060 C.A
A2020A5070 E.V.B.S

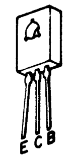
TR1,2	2SK246
TR3	2SK213
TR4	2SJ76
TR5	2SC3116
TR6	2SA1248
TR7	2SD612K

LOCATION OF CONPONENTS

TR	
TR1	A1
TR2	A2
TR3	B1
TR4	B2
TR5	C1
TR6	C2
TR7	C1
IC	
IC1	C3
CONNECTOR	
① to ⑤	A2
(①,②,④)	A1
⑥ to ⑨	C2
J7	C3
J8	C3
J9	C2



2SK213
2SJ76

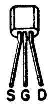


2SC3116
2SA1248
2SD612K

○○○ = NPN TRANSISTOR
B

●○○ = PNP TRANSISTOR
B

※	F 3	F 4	F 5
C , A	1A 125V	1A 125V	1A 125V
E,V,B,S	T1A	T1A	T1A

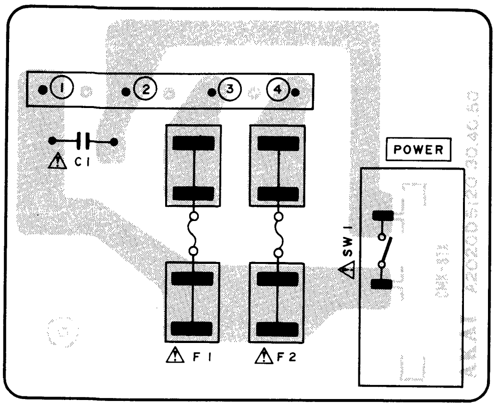


2SK246

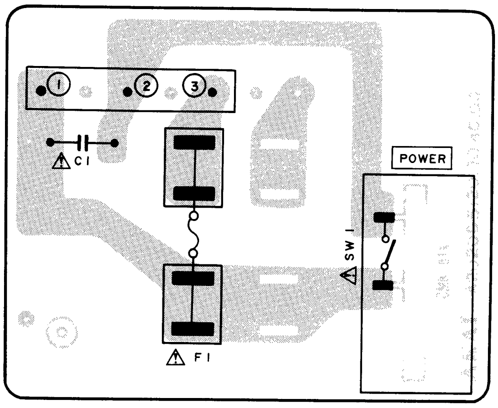
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

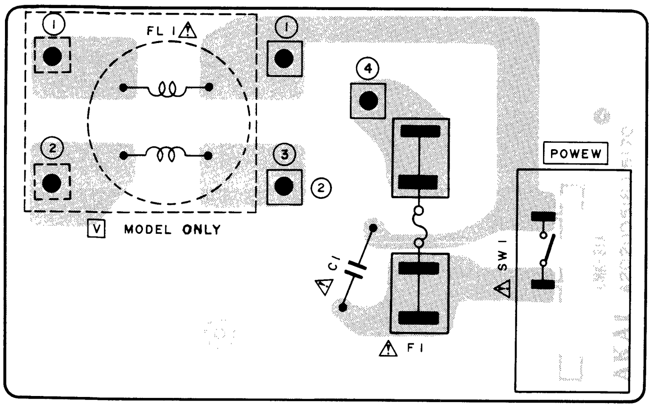
4) POWER SUPPLY P.C BOARD A2020D5120 U, A2020D5130 C, A and A2020D5160 E, V, B, S


①
②
③
④
⚠ C1
POWER
⚠ SW1
⚠ F1
⚠ F2

POWER SUPPLY PCB
A2020D5120 U


①
②
③
⚠ C1
POWER
⚠ SW1
⚠ F1

POWER SUPPLY PCB
A2020D5130 C.A

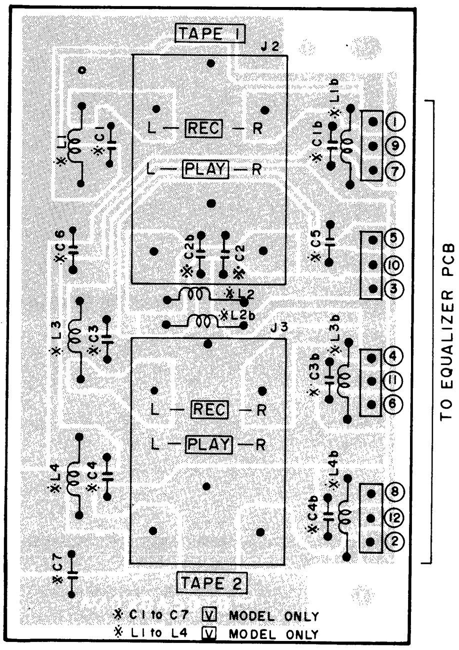

①
FL1 ⚠
①
④
②
③
②
V MODEL ONLY
POWEW
⚠ C1
⚠ SW1
⚠ F1

POWER SUPPLY PCB
A2020D5160 E.V.B.S

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

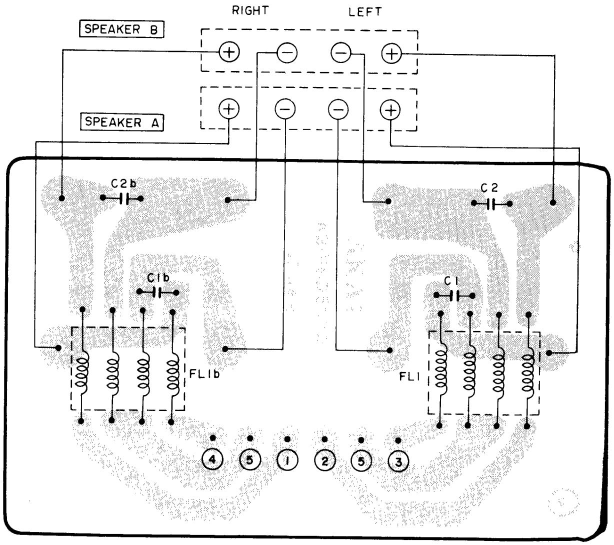
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

5) INPUT P.C BOARD A2020A501B


TAPE 1
J2
L — REC — R
L — PLAY — R
※L1
※C1
※C1b
※L1b
①
⑨
⑦
※C6
※C2b
※C2
※C5
⑤
⑩
③
※L2
※L2b
※L3
※C3
J3
※C3b
※L3b
④
⑪
⑥
L — REC — R
L — PLAY — R
※L4
※C4
※C4b
※L4b
⑧
⑫
②
※C7
TAPE 2
※ C1 to C7 V MODEL ONLY
※ L1 to L4 V MODEL ONLY
TO EQUALIZER PCB

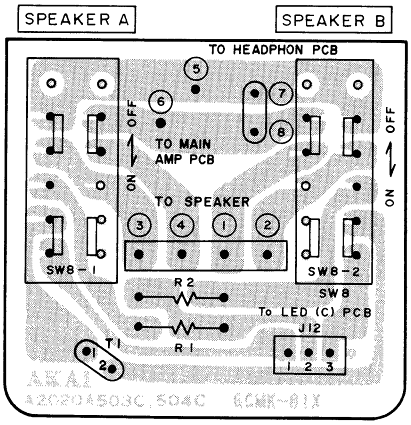
INPUT PCB A2020A501B

6) TERMINAL P.C BOARD A2018D5070 V MODEL

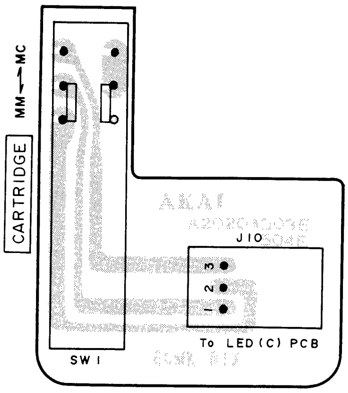

RIGHT
LEFT
SPEAKER B
SPEAKER A
+
−
−
+
+
−
−
+
C2b
C2
C1b
C1
FL1b
FL1
④
⑤
①
②
⑤
③

TERMINAL PCB A2018D5070 V MODEL

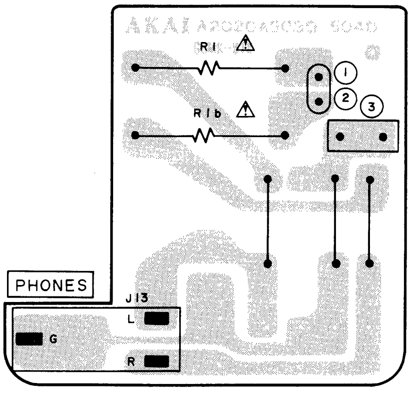
7) OTHER P.C BOARDS


SPEAKER A
SPEAKER B
TO HEADPHON PCB
5
6
7
8
OFF
ON
TO MAIN AMP PCB
TO SPEAKER
3
4
1
2
SW8-1
SW8-2
SW8
R2
R1
To LED (C) PCB
J12
1 2 3
T1
1
2
AKAI
A2020A503C,504C

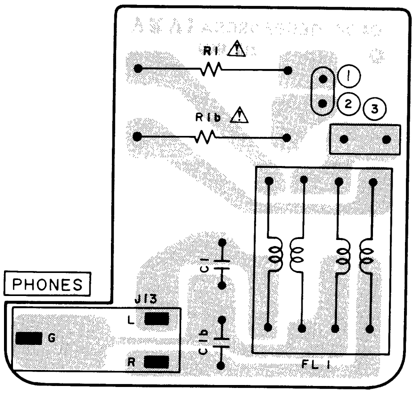
SPEAKER SW PCB
A2020A503C


MM → MC
CARTRIDGE
AKAI
J10
3
2
1
To LED (C) PCB
SW1

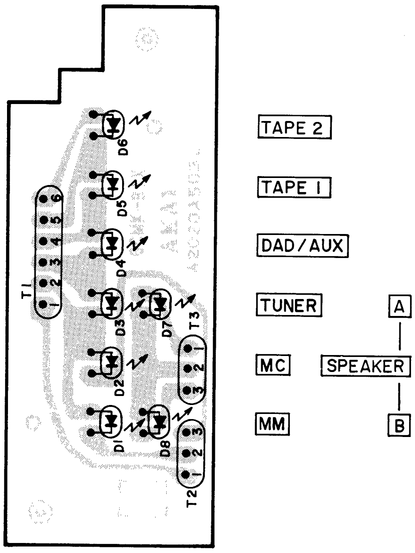
SWITCH PCB
A2020A503E


AKAI
R1 ⚠
R1b ⚠
1
2
3
PHONES
J13
L
G
R

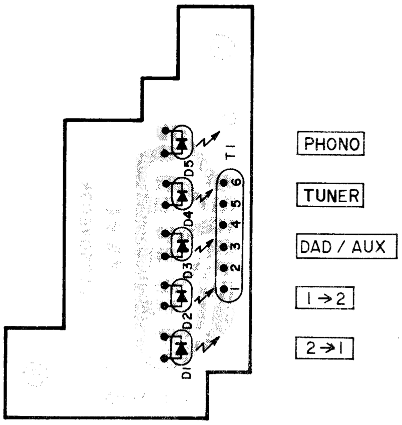
HEAD PHONE PCB
A2020A503D


AKAI
R1 ⚠
R1b ⚠
1
2
3
PHONES
J13
L
G
R
C1
C1b
FL1

HEAD PHONE PCB
A2020A503D V MODEL


D6
D5
D4
D3
D7
D2
D1
D8
T1
1
2
3
4
5
6
T3
T2
AKAI
TAPE 2
TAPE 1
DAD/AUX
TUNER
MC
MM
A
SPEAKER
B

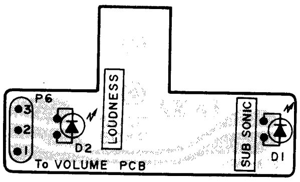
LED(A) PCB
A2020A503J


D5
D4
D3
D2
D1
T1
1
2
3
4
5
6
AKAI
PHONO
TUNER
DAD / AUX
1→2
2→1

LED(B) PCB
A2020A503K

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


P6
3
2
1
D2
LOUDNESS
To VOLUME PCB
SUB SONIC
D1
AKAI

LED (A) PCB
A2020A503F

MEMO

SECTION 2

PARTS LIST

TABLE OF CONTENTS

RECOMMENDED SPARE PARTS 23
1. MAIN AMP U7 P.C BOARD BLOCK 24
2. TONE CONTROL P.C BOARD BLOCK 24
3. EQUALIZER P.C BOARD BLOCK 25
4. POWER SUPPLY U7 P.C BOARD BLOCK 25
5. TERMINAL P.C BOARD (V ONLY) 25
6. ASSEMBLY BLOCK 26
7. FINAL ASSEMBLY BLOCK 27
INDEX 28

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the ~~Preliminary Parts~~ List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

b) P.C Board Block

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	BT-348849	⚠ TRANS POWER AM-U7T-30 (C,A)
2	BT-348850	⚠ TRANS POWER AM-U7T-40 (E,V)
3	BT-348851	⚠ TRANS POWER AM-U7T-50 (B,S)
4	BT-348848	⚠ TRANS POWER AM-U7T-70 (U)
5	ED-345555	⚠ D SILICON DBB10C 200/1.0A
6	ED-301911	⚠ D SILICON H DS448
7	ED-348786	⚠ D SILICON RB154 400/1.5A
8	ED-348836	⚠ D SILICON RB602U 200/6.0A
9	ED-324194	⚠ D ZENER H 05Z5.1 X
10	ED-323535	⚠ D ZENER H 05Z8.2 X
11	ED-348860	D LED GL4NG2 GRN
12	ED-348861	D LED GL4PR2 RED
13	ED-337391	D LED GL5NG6 GRN
14	ED-337153	D SILICON H DS446FA5 F10
15	ED-301911	D SILICON H DS448
16	ED-330207	D SILICON H DS448BT T26
17	ED-346615	D ZENER H HZ12 A2
18	ED-346564	D ZENER H HZ15L 1
19	ED-330219	D ZENER H HZ20L 2
20	ED-346576	D ZENER H HZ24L 1
21	ED-346579	D ZENER H HZ24L 3
22	ED-337990	D ZENER H HZ27L 1
23	EF-623103	⚠ FUSE SEMKO T 250V 1.00A(E,V,B,S)
24	EF-690996	⚠ FUSE SEMKO T 250V 4.00A (U)
25	EF-690996	⚠ FUSE SEMKO T 250V 4.00A(E,V,B,S)
26	EF-310229	⚠ FUSE TSC 125V 1.00A (C,A)
27	EF-345658	⚠ FUSE TSC 125V 8.00A (C,A)
28	EI-345474	IC HA12002
29	EI-344764	IC M5218P-21
30	EI-348785	IC M5220L
31	EI-313797	IC TC4001BP
32	EI-348843	IC TC9130P
33	EI-337360	IC μPC4082C
34	EI-348865	IC μPC4082C
35	EL-348854	PL CODE 12.0V 220MA 250/250 (IN902)
36	EL-348852	PL CODE 14.0V 100MA 100/100 (IN901)
37	EL-348853	PL CORD 14.0V 100MA 250/250 (IN903)
38	EQ-348789	RELAY POW JC2AD 48V
39	ER-319455	⚠ R FUSE ERD2FC S10 1/4W 10R0G
40	ER-345751	⚠ R FUSE ERD2FC S10 1/4W 15R0G
41	ER-338000	⚠ R FUSE ERD2FC S10 1/4W 2200G
42	ER-345618	⚠ R FUSE ERD2FC S10 1/4W 2700G
43	ER-345619	⚠ R FUSE ERD2FC S10 1/4W 3301G
44	ER-318647	⚠ R FUSE ERD2FC S10 1/4W 4R7J
45	ER-318248	⚠ R FUSE ERD2FC S10 1/4W 47R0G
46	ER-337756	⚠ R FUSE ERD2FC S10 1/4W 4700G
47	ES-348862	⚠ SW PUSH ESB-70405T 01-1 UC (C,A)
48	ES-343688	⚠ SW PUSH ESB-90279S 01-1EBV (U,E,V,B,S)
49	ES-343364	⚠ SW SELECTOR 0240#01 01-4 (U)
50	ES-348783	SW PUSH ESB-62908
51	ES-345481	SW PUSH SEA12 04-2N
52	ES-348841	SW PUSH SEA12 04-2S
53	ES-348845	SW PUSH SUL221S 2-THROW
54	ES-348847	SW REMOTE O SUR512 02-2
55	ES-348784	SW REMOTE S ESA26134 06-6
56	ES-337388	SW REMOTE S SSR24352 04-3
57	ES-328777	SW TACT EVQ-PYR12K
58	ET-348788	⚠ TR FET 2SJ76
59	ET-348787	⚠ TR FET 2SK213
60	ET-348856	⚠ TR 2SA1106 O,Y
61	ET-345626	⚠ TR 2SA1248 S,T
62	ET-348857	⚠ TR 2SC2581 O,Y
63	ET-345625	⚠ TR 2SC3116 S,T
64	ET-310148	⚠ TR 2SD612K E,F
65	ET-322353	TR FET 2SK117 Y
66	ET-337759	TR FET 2SK246 GR
67	ET-345614	TR FET 2SK270 BL,V
68	ET-348832	TR 2SA1207 S,T
69	ET-348829	TR 2SA1209 S,T
70	ET-348834	TR 2SA1220 Q,P
71	ET-345626	TR 2SA1248 S,T
72	ET-348835	TR 2SC2690 Q,P
73	ET-348830	TR 2SC2909 S,T
74	ET-348831	TR 2SC2911 S,T
75	ET-345625	TR 2SC3116 S,T
76	ET-316171	TR 2SC536K-NP E,F
77	ET-348844	TR 2SD467C C
78	EV-338118	R S-FIX V H1052A 3P 0.15W 104
79	EV-336911	VR ROTARY 16P10×1J SPECIAL W105
80	EV-330725	VR ROTARY 16P20×2D C104
81	EV-330843	VR ROTARY 16P20×2E C104
82	EV-337308	VR SLIDE 100P2SV0B B254

1. MAIN AMP U7 P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
1-1U	BA-A2020A050A	PC MAIN BLK AM-U7(U)(U,C,A)
1-1V	BA-A2020A050B	PC MAIN BLK AM-U7(V)(V)
1-1E	BA-A2020A050C	PC MAIN BLK AM-U7(E)(E,B,S)

MAIN AMP U7 P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
1-IC1A	EI-337360	IC µPC4082C
1-IC2A	EI-345474	IC HA12002
1-TR1A	ET-322353	TR FET 2SK117 Y
1-TR2A	ET-348835	TR 2SC2690 Q,P
1-TR3A	ET-348834	TR 2SA1220 Q,P
1-TR4A,5A	ET-348830	TR 2SC2909 S,T
1-TR6A	ET-348829	TR 2SA1209 S,T
1-TR7A	ET-348831	TR 2SC2911 S,T
1-TR8A	ET-345625	TR 2SC3116 S,T
1-TR9A	ET-345626	TR 2SA1248 S,T
1-TR10A	ET-348830	TR 2SC2909 S,T
1-TR11A	ET-338832	TR 2SA1207 S,T
1-TR13A	ET-348832	TR 2SA1207 S,T
1-TR14A,15A	ET-322353	TR FET 2SK117 Y
1-D1A,2A	ED-330219	D ZENER H HZ20L 2
1-D3Ato5A	ED-301911	D SILICON H DS448
1-D6A,7A	ED-337153	D SILICON H DS446FA5 F10
1-D8A	ED-348836	⚠ D SILICON RB602U 200/6.0A
1-D9A	ED-337153	D SILICON H DS446FA5 F10
1-D10A	ED-324194	⚠ D ZENER H 05Z5.1 X
1-D11,12A	ED-323535	⚠ D ZENER H 05Z8.2 X
1-D13A,14A	ED-301911	⚠ D SILICON H DS448
1-R13A,14A	ER-345659	⚠ R OMF H S15 FS 1W 272J
1-R22A	ER-333426	⚠ R CB H S10 FS RDS 1/4W 622J
1-R25A	ER-333429	⚠ R CB H S10 FS RDS 1/4W 682J
1-R48A	ER-345616	⚠ R CT W R33+R33 5W
1-R49A,50A	ER-337754	⚠ R OMF H S15 FS 1W 100J
1-R59A	ER-345617	⚠ R OMF H S20 FS 2W 272J
1-R60A	ER-328067	⚠ R CB H S10 FS RDS 1/4W 331J
1-FR1A,2A	ER-345618	⚠ R FUSE ERD2FC S10 1/4W 2700G
1-FR3A	ER-345619	⚠ R FUSE ERD2FC S10 1/4W 3301G
1-FR4A,5A	ER-319455	⚠ R FUSE ERD2FC S10 1/4W 10R0G
1-FR6A	ER-337756	⚠ R FUSE ERD2FC S10 1/4W 4700G
1-FR7A,8A	ER-345751	⚠ R FUSE ERD2FC S10 1/4W 15R0G
1-C1A	EC-345656	C PP V F05 PP 473J 50DC
1-C4A	EC-345656	C PP V F05 PP 473J 50DC
1-C16A,17A	EC-348833	C CE V SNP 153M 63DC
1-VR6A	EV-361800	R S-FIX H SR19R 3P 0.15W 471
1-L1A	EO-332116	COIL FIX 2 103AK-006A 2.2µH
1-RL1A	EQ-348789	RELAY POW JC2AD 48V

VOLUME P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
1-IC1B	EI-348843	IC TC9130P
1-IC2B	EI-313797	IC TC4001BP
1-TR1Bto3B	ET-348844	TR 2SD467C C
1-TR4B	ET-316171	TR 2SC536K-NP E,F
1-D1Bto3B	ED-301911	D SILICON H DS448
1-C1B	EC-344155	C PP V F05 PP 181J 50DC
1-C2B	EC-345655	C PP V F05 PP 223J 50DC
1-SW4B	ES-348841	SW PUSH SEA12 04-2S
1-SW5B	ES-345481	SW PUSH SEA12 04-2N
1-SW6B	ES-348841	SW PUSH SEA12 04-2S
1-SW7B	ES-328777	SW TACT EVQ-PYR12K
1-VR2B	EV-337308	VR SLIDE 100P2SV0B B254

SPEAKER SW P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
1-SW8C	ES-348845	SW PUSH SUL221S 2-THROW

HEADPHONE P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
1-J13D	EJ-348846	PHONE J 3P HLJ0540 6.3
1-FL1D	EO-342936	COIL BALUN (V)
1-R1D	ER-624756	⚠ R OMF H FS 2W 331J

SWITCH P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
1-SW1E	ES-348847	SW REMOTE O SUR512 02-2

LED (C) P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
1-D1F	ED-337391	D LED GL5NG6 GRN
1-D2F	ED-337391	D LED GL5NG6 GRN

LED (A) P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
1-D1Jto8J	ED-348860	D LED GL4NG2 GRN

LED (B) P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
1-D1Kto5K	ED-348861	D LED GL4PR2 RED

2. TONE CONTROL P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1U	BA-A2020A060A	PC TONE BLK AM-U7(U) (U)
2-1C	BA-A2020A060B	PC TONE BLK AM-U7(C)(C,A)
2-1E	BA-A2020A060C	PC TONE BLK AM-U7(E)(E,B,S)
2-1V	BA-A2020A060D	PC TONE BLK AM-U7(V)(V)

TONE CONTROL P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
2-IC1	EI-344764	IC M5218P-21
2-TR1,2	ET-337759	TR FET 2SK246 GR
2-TR3	ET-348787	⚠ TR FET SSK213
2-TR4	ET-348788	⚠ TR FET 2SJ76
2-TR5	ET-345625	⚠ TR 2SC3116 S,T
2-TR6	ET-345626	⚠ TR 2SA1248 S,T
2-TR7	ET-310148	⚠ TR 2SD612K E,F
2-D1,2	ED-346564	D ZENER H HZ15L 1
2-D3	ED-346579	D ZENER H HZ24L 3
2-D4	ED-337990	D ZENER H HZ27L 1
2-D5	ED-346579	D ZENER H HZ24L 3
2-D6	ED-337990	D ZENER H HZ27L 1
2-D7,8	ED-346576	D ZENER H HZ24L 1
2-D9,10	ED-330207	D SILICON H DS448BT T26
2-D11	ED-346615	D ZENER H HZ12 A2
2-D12	ED-348786	⚠ D SILICON RB154 400/1.5A
2-D13	ED-345555	⚠ D SILICON DBB10C 200/1.0A
2-R22,23	ER-306127	⚠ R CB H S15 FS RDS 1/2W 681J
2-R24	ER-316802	⚠ R CB H S10 FS RDS 1/4W 471J
2-FR1,2	ER-318647	⚠ R FUSE ERD2FC S10 1/4W 4R7J
2-FR3,4	ER-318248	⚠ R FUSE ERD2FC S10 1/4W 47R0G
2-IC15,16	EC-201639	C EC V CUT SM 331M 80DC
2-J7,8	EJ-323065	SOCKET JUMPER W-D0603 3P
2-J9	EJ-323264	SOCKET JAMPER W-D0605 5P
2-VR3	EV-330725	VR ROTARY 16P20×2D C104
2-VR4	EV-330843	VR ROTARY 16P20×2E C104
2-VR5	EV-336911	VR ROTARY 16P10×1J SPECIAL W105
2-F3Cto5C	EF-310229	⚠ FUSE TSC 125V 1.00A(C,A)
2-F3Eto5E	EF-623103	⚠ FUSE SEMKO T 250V 1.00A (E,V,B,S)

3. EQUALIZER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1U	BA-A2020A040A	PC EQ BLK AM-U7(U) (U,C,A,E,B,S)
3-1V	BA-A2020A040B	PC EQ BLK AM-U7(V)
	EQUALIZER P.C BOARD	
3-IC1A	EI-348785	IC M5220L
3-IC2A	EI-348865	IC μPC4082C
3-TR1A	ET-345614	TR FET 2SK270 BL,V
3-D1A,2A	ED-301911	D SILICON H DS448
3-D3A,4A	ED-346564	D ZENER H HZ15L 1
3-R11A	ER-346864	R MF H F10 1/4W 75R0F
3-R12A	ER-345664	R MF H F10 1/4W 8R20F
3-R13A	ER-338325	R MF H 1/4W 4302F
3-R14A	ER-338078	R MF H F10 1/4W 3601F
3-R23A,24A	ER-327198	⚠ R CB H S10 FS RDS 1/4W 122J
3-FR1A,2A	ER-338000	⚠ R FUSE ERD2FC S10 1/4W 2200G
3-C1A	EC-350745	C STY V CUT CQ09S2B 102J 125DC
3-C2A	EC-350675	C STY V CUT CQ09S2B 331J 125DC (EXCEPT V)
3-C3A	EC-344478	C PP V F05 PP 561J 50DC
3-C4A	EC-345607	C PP V F05 PP 152J 50DC
3-C5A	EC-345608	C PP V F05 PP 7442G 50DC
3-C6A	EC-345609	C PP V F05 PP 2102G 50DC
3-C7A	EC-345655	C PP V F05 PP 223J 50DC
3-C9Ato12A	EC-345655	C PP V F05 PP 223J 50DC
3-C14A	EC-350675	C STY V CUT CQ09S2B 331J 125DC (V)
3-J1A	EJ-337404	PIN J AJC-052-ABB P 6P
3-J4A,5A	EJ-324913	SOCKET JAMPER W-D0606 6P
3-SW1A	ES-337388	SW REMOTE S SSR24352 04-3
3-SW2A	ES-348783	SW PUSH ESB-62908
3-SW3A	ES-348784	SW REMOTE S ESA26134 06-6
3-VR1A	EV-338118	R S-FIX V H1052A 3P 0.15W 104
3-L1A	EO-337684	COIL FIX 2 FL12R751E 750UH (V)
3-L2A,3A	EO-336934	COIL FIX 1 LAL03KH 2.20UH M (V)
	INPUT P.C BOARD	
3-J2B,3B	EJ-336915	PIN J AJC-054-ABB P 4P
3-L1Bto4B	EO-336934	COIL FIX 1 LAL03KH 2.20UH M (V)

4. POWER SUPPLY U7 P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-SW1U	ES-343688	⚠ SW PUSH ESB-90279S 01-1EBV (U,E,V,B,S)
4-SW1C	ES-348862	⚠ SW PUSH ESB-70405T 01-1 UC (C,A)
4-C1U	EC-320548	⚠ C CE V F 103Z 250AC (U)
4-C1C	EC-314688	⚠ C CE V FZ 103P 125AC (C,A)
4-C1E	EC-338411	⚠ C CE V FZ 103P 400AC (E,V,B,S)
4-FL1	EO-338409	⚠ COIL LF FKOB160MH02 250UH (V)
4-F1U,2U	EF-690996	⚠ FUSE SEMKO T 250V 4.00A(U)
4-F1C	EF-345658	⚠ FUSE TSC 125V 8.00A (C,A)
4-F1E	EF-690996	⚠ FUSE SEMKO T 250V 4.00A (E,V,B,S)

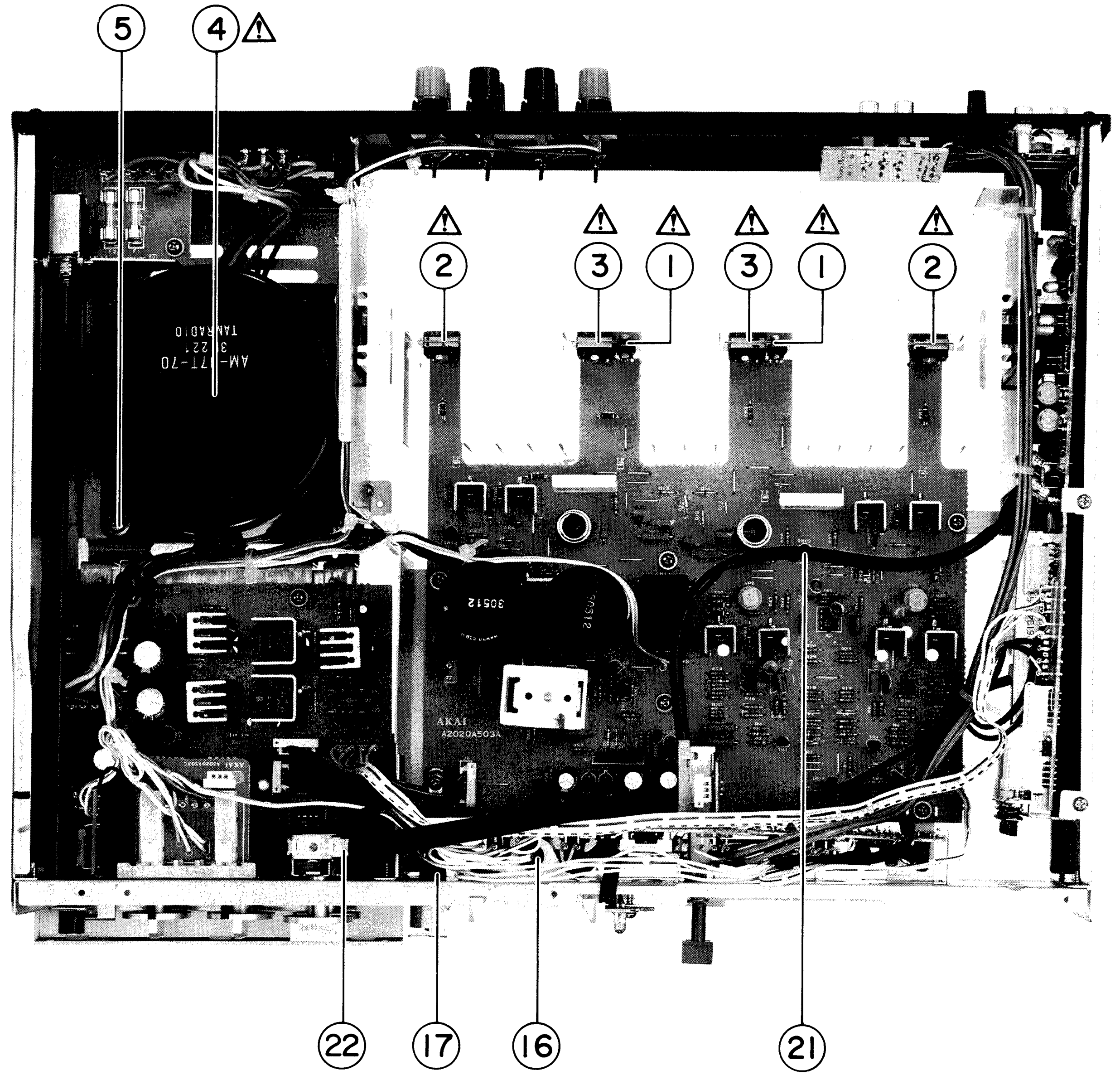
5. TERMINAL P.C BOARD (V ONLY)

REF. NO.	PARTS NO.	DESCRIPTION
5-J1	EJ-342935	TERMINAL W/SCREW YKD31-0132 P 8P
5-FL1	EO-342936	COIL BALUN

6. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	HEAT SINK BLOCK	
6-1	ET-345625	⚠ TR 2SC3116 S,T (TR901)
6-2	ET-348857	⚠ TR 2SC2581 O,Y (TR902)
6-3	ET-348856	⚠ TR 2SA1106 O,Y (TR903)
	ASSEMBLY BLOCK	
6-4U	BT-348848	⚠ TRANS POWER AM-U7T-70 (U)
6-4C	BT-348849	⚠ TRANS POWER AM-U7T-30(C,A)
6-4E	BT-348850	⚠ TRANS POWER AM-U7T-40(E,V)
6-4B	BT-348851	⚠ TRANS POWER AM-U7T-50(B,S)
6-5	ZS-345624	ST PAN40×08STL CMT CUP
6-6U	SP-345583E	PANEL REAR AM-U7(U)
6-6C	SP-345583F	PANEL REAR AM-U7(C,A)
6-6E	SP-345583G	PANEL REAR AM-U7(E,V)
6-6B	SP-345583H	PANEL REAR AM-U7(B,S)
6-7	ZS-308846	T2BR30×08STL BZN PROJECTION
6-8	EJ-329610	TERMINAL W/SCREW UB-0067 L 1P
6-9	EJ-337406	TERMINAL W/SCREW ANB-024-AAA S 8P
6-10	ZS-522865	T2BR30×12STL BNI
6-11	EJ-337405	⚠ SOCKET OUTLET S2T733T164 JUC 3×2P (U,C,A)
6-12U	EW-374894	⚠ AC CORD 2 CORES VM-0129A, VFF U/T (U)
6-12C	EW-343363	⚠ AC CORD 2 CORES KP-8, SPT-2 105C UC (C)
6-12A	EW-305691	⚠ AC CORD 2 CORES KP-8, SPT-1 UC (A)
6-12E	EW-346251	⚠ AC CORD 2 CORES VM0364,NR N/815 EV (E,V)
6-12B	EW-346249	⚠ AC CORD 2 CORES LCFL2×0.75 B (B)
6-12S	EW-336924	⚠ AC CORD 2 CORES KP-560, LTSA-2F S (S)
6-13	EZ-631945	STRAIN RELIEF SR-4N-4
6-14	ES-343364	⚠ SW SELECTOR 0240#01 01-4(U)
6-15	ZS-309315	T2BR30×10STL BNI
6-16	EL-348852	PL CODE 14.0V 100MA 100/100 (IN901)
6-17	EL-348854	PL CODE 12.0V 220MA 250/250 (IN902)
6-18x	EL-348853	PL CORD 14.0V 100MA 250/250 (IN903)
6-19	SA-312465	CIRCULAR FOOT (A) PART CA
6-20x	ZS-462925	T2BR40×08STL CMT
6-21	ES-348858	SW REMOTE B SWR1306 L=287
6-22	ES-348859	SW REMOTE W ESA-335017B L=310 (SW902)
6-23x	ZW-305013	RV POP32 (A)
6-24	ZS-308846	T2BR30×08STL BZN PROJECTION

ASSEMBLY BLOCK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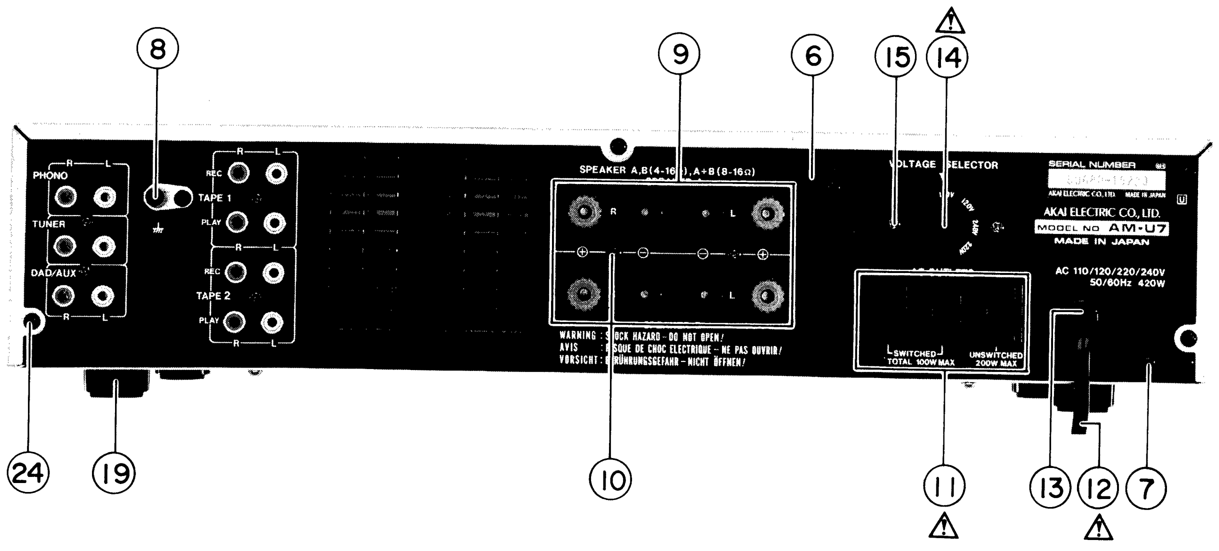
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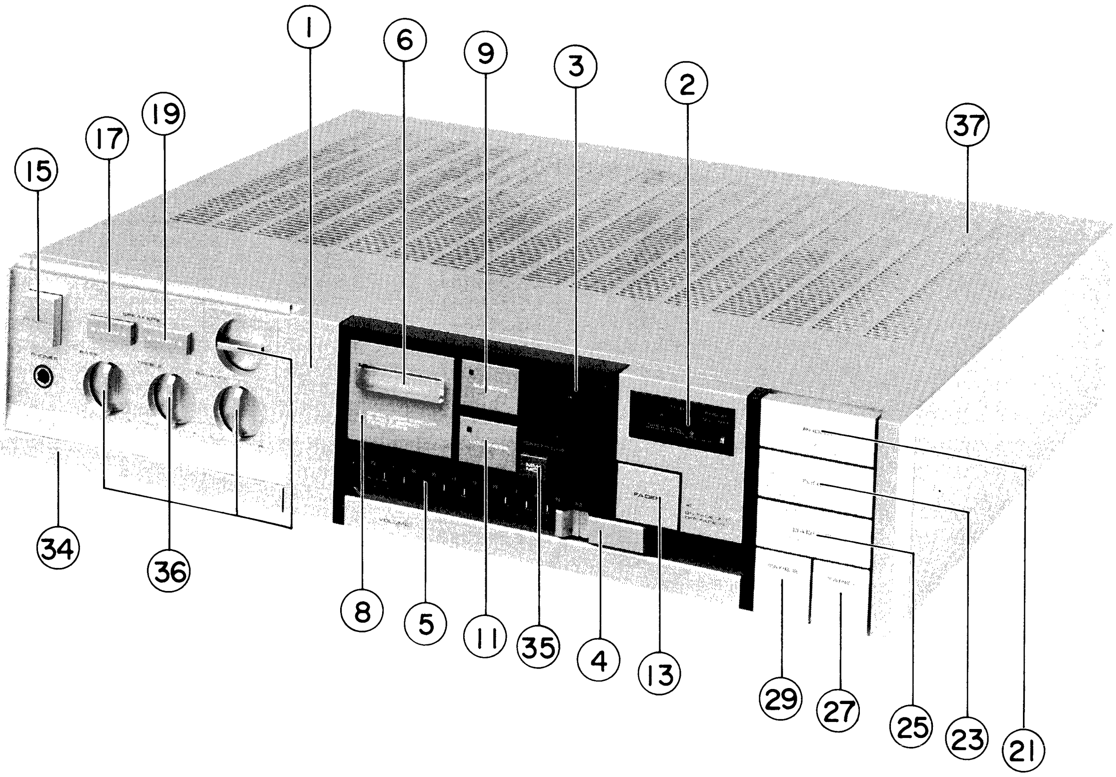
PHONO
TUNER
DAD/AUX
TAPE 1
TAPE 2
REC
PLAY
SPEAKER A,B(4-16Ω),A+B(8-16Ω)
VOLTAGE SELECTOR
SERIAL NUMBER
AKAI ELECTRIC CO., LTD.
MODEL NO. AM-U7
MADE IN JAPAN
AC 110/120/220/240V 50/60Hz 420W
SWITCHED TOTAL 100W MAX
UNSWITCHED 200W MAX
㉔
⑲
⑩
⑪ ⚠
⑬
⑫ ⚠
⑦

FINAL ASSEMBLY BLOCK



7. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
7-1	BD-A2020A080A	PANEL FRONT BLK AM-U7
7-1P	BD-A2020A080B	PANEL FRONT BLK AM-U7-P
	PANEL FRONT BLOCK	
7-2	SP-348759	WINDOW DISPLAY (A)
7-3	SP-348761	WINDOW DISPLAY (B)
7-4	SK-348762A	KNOB VOLUME
7-4P	SK-348762B	KNOB VOLUME-P
7-5	TA-348741B	WINDOW VOLUME AM-U7
7-6	SK-B348754	KNOB PUSH LINE STRAIGHT PART
7-7x	ZG-323317	SP (C)
7-8	SE-348755A	ESCUTCHEON LINE STRAIGHT
7-8P	SE-348755B	ESCUTCHEON LINE STRAIGHT-P
7-9	SK-B348752A	KNOB PUSH SUBSONIC PART
7-9P	SK-B348752B	KNOB PUSH SUBSONIC-P PART
7-10x	ZG-322579	SP (A)
7-11	SK-B348752C	KNOB PUSH LOUDNESS PART
7-11P	SK-B348752D	KNOB PUSH LOUDNESS-P PART
7-12x	ZG-322579	SP (A)
7-13	SK-348750A	KNOB PUSH FADER
7-13P	SK-348750B	KNOB PUSH FADER-P
7-14x	ZG-322579	SP (A)
7-15	SK-342820A	KNOB POWER
7-15P	SK-342820B	KNOB POWER-P
7-16x	ZG-322579	SP (A)
7-17	SK-348757A	KNOB PUSH SYSTEM (A)
7-17P	SK-348757B	KNOB PUSH SYSTEM (A)-P
7-18x	ZG-348769	SP PUSH
7-19	SK-348757C	KNOB PUSH SYSTEM (B)
7-19P	SK-348757D	KNOB PUSH SYSTEM (B)-P

REF. NO.	PARTS NO.	DESCRIPTION
7-20x	ZG-348769	SP PUSH
7-21	SK-B348747A	KNOB CAP PHONO PART
7-21P	SK-B348747B	KNOB CAP PHONO-P PART
7-22x	ZG-323317	SP (C)
7-23	SK-B348748A	KNOB CAP TUNER PART
7-23P	SK-B348748B	KNOB CAP TUNER-PART
7-24x	ZG-349041	SP PUSH (B)
7-25	SK-B348748C	KNOB CAP AUX PART
7-25P	SK-B348748D	KNOB CAP AUX-P PART
7-26x	ZG-349041	SP PUSH (B)
7-27	SK-B348749A	KNOB CAP TAPE1 PART
7-27P	SK-B348749B	KNOB CAP TAPE1-P PART
7-28x	ZG-322579	SP (A)
7-29	SK-B348749C	KNOB CAP TAPE2 PART
7-29P	SK-B348749D	KNOB CAP TAPE2-P PART
7-30x	ZG-322579	SP (A)
	PANEL DOOR BLOCK	
7-31x	ZG-345575A	SP PLATE (L)
7-32x	ZG-345575B	SP PLATE (R)
7-33x	MB-345576	CUSHION DOOR
7-34	BD-345587C	PANEL DOOR AM-U7
7-34P	BD-345587D	PANEL DOOR AM-U7-P
	FINAL ASSEMBLY BLOCK	
7-35	SK-348751	KNOB PUSH MM/MC
7-36	SK-348756A	KNOB ROTARY AM-U7
7-36P	SK-348756B	KNOB ROTARY-P
7-37	SP-345589A	COVER UPPER
7-37P	SP-345589B	COVER UPPER-P

SYMBOL FOR COLOR VARIATION

NONE – SILVER
P – PEARL SHADOW

INDEX

PARTS NO.	REF. NO.
BA-A2020A040A	3-1U
BA-A2020A040B	3-1V
BA-A2020A050A	1-1U
BA-A2020A050B	1-1V
BA-A2020A050C	1-1E
BA-A2020A060A	2-1U
BA-A2020A060B	2-1C
BA-A2020A060C	2-1E
BA-A2020A060D	2-1V
BD-A2020A080A	7-1
BD-A2020A080B	7-1P
BD-345587C	7-34
BD-345587D	7-34P
BT-348848	6-4U
BT-348849	6-4C
BT-348850	6-4E
BT-348851	6-4B
EC-201639	2-C15
EC-201639	2-C16
EC-314688	4-C1C
EC-320548	4-C1U
EC-338411	4-C1E
EC-344155	1-C1B
EC-344478	3-C3A
EC-345607	3-C4A
EC-345608	3-C5A
EC-345609	3-C6A
EC-345655	1-C2B
EC-345655	3-C7A
EC-345655	3-C9A
EC-345655	3-C10A
EC-345655	3-C11A
EC-345655	3-C12A
EC-345656	1-C1A
EC-345656	1-C4A
EC-348833	1-C16A
EC-348833	1-C17A
EC-350675	3-C2A
EC-350675	3-C14A
EC-350745	3-C1A
ED-301911	1-D14A
ED-301911	1-D2B
ED-301911	1-D1B
ED-301911	1-D3B
ED-301911	1-D13A
ED-301911	1-D3A
ED-301911	1-D4A
ED-301911	1-D5A
ED-301911	3-D2A
ED-301911	3-D1A
ED-323535	1-D11A
ED-323535	1-D12A
ED-324194	1-D10A
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ED-348860	1-D8J
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EL-348854	6-17
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EO-342936	5-FL1
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ER-306127	2-R23
ER-316802	2-R24
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ER-318248	2-FR4
ER-318647	2-FR1
ER-318647	2-FR2
ER-319455	1-FR4A
ER-319455	1-FR5A
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ER-345619	1-FR3A
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EV-330843	2-VR4
EV-336911	2-VR5
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EV-361800	1-VR6A
EW-305691	6-12A
EW-336924	6-12S
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SE-348755B	7-8P
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SK-B348752C	7-11
SK-B348752D	7-11P
SK-B348754	7-6
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SK-342820B	7-15P
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SK-348750B	7-13P
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SK-348756B	7-36P
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SK-348757D	7-19P
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SP-345583G	6-6E
SP-345583H	6-6B
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SP-345589B	7-37P
SP-348759	7-2
SP-348761	7-3
TA-348741B	7-5
ZG-322579	7-28x
ZG-322579	7-30x
ZG-322579	7-16x
ZG-322579	7-10x
ZG-322579	7-12x
ZG-322579	7-14x
ZG-323317	7-22x
ZG-323317	7-7x
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ZG-345575B	7-32x
ZG-348769	7-18x
ZG-348769	7-20x
ZG-349041	7-24x
ZG-349041	7-26x
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ZS-308846	6-24
ZS-309315	6-15
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ZS-522865	6-10
ZW-305013	6-23x

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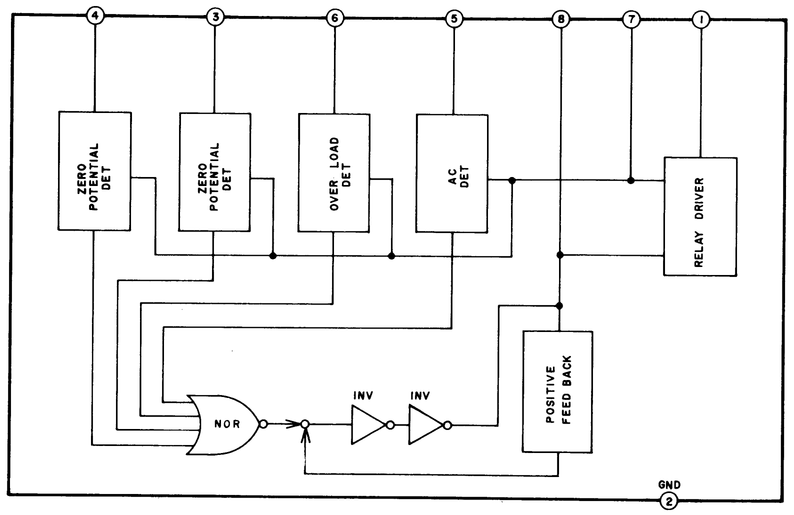
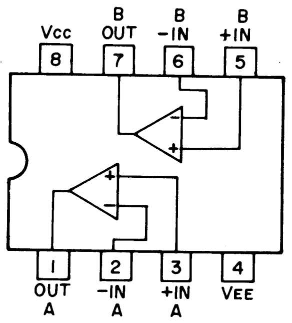
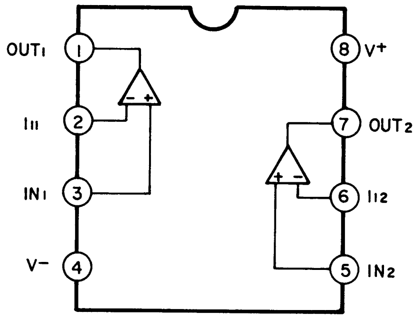

ZERO POTENTIAL DET
ZERO POTENTIAL DET
OVER LOAD DET
AC DET
RELAY DRIVER
POSITIVE FEED BACK
NOR
INV
INV
GND
4
3
6
5
8
7
1
2

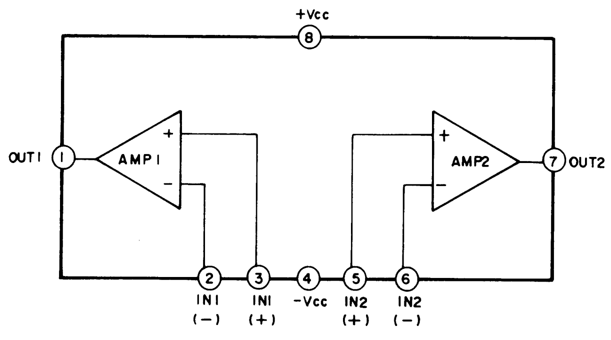
M5218P-21


Vcc
B OUT
B -IN
B +IN
8
7
6
5
1
2
3
4
OUT A
-IN A
+IN A
VEE

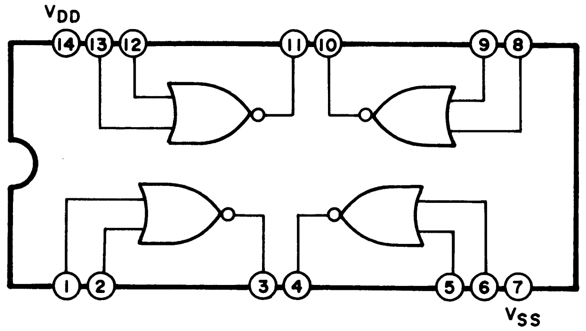
μPC4082C


OUT1
I11
IN1
V-
V+
OUT2
I12
IN2

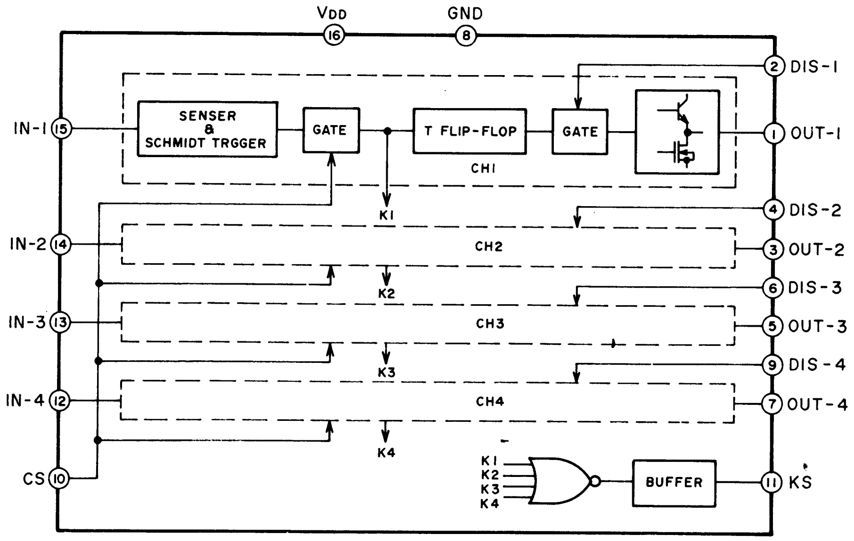
M5220L


+Vcc
OUT1
AMP1
AMP2
OUT2
IN1 (−)
IN1 (+)
-Vcc
IN2 (+)
IN2 (−)

TC4001BP



TC9130P

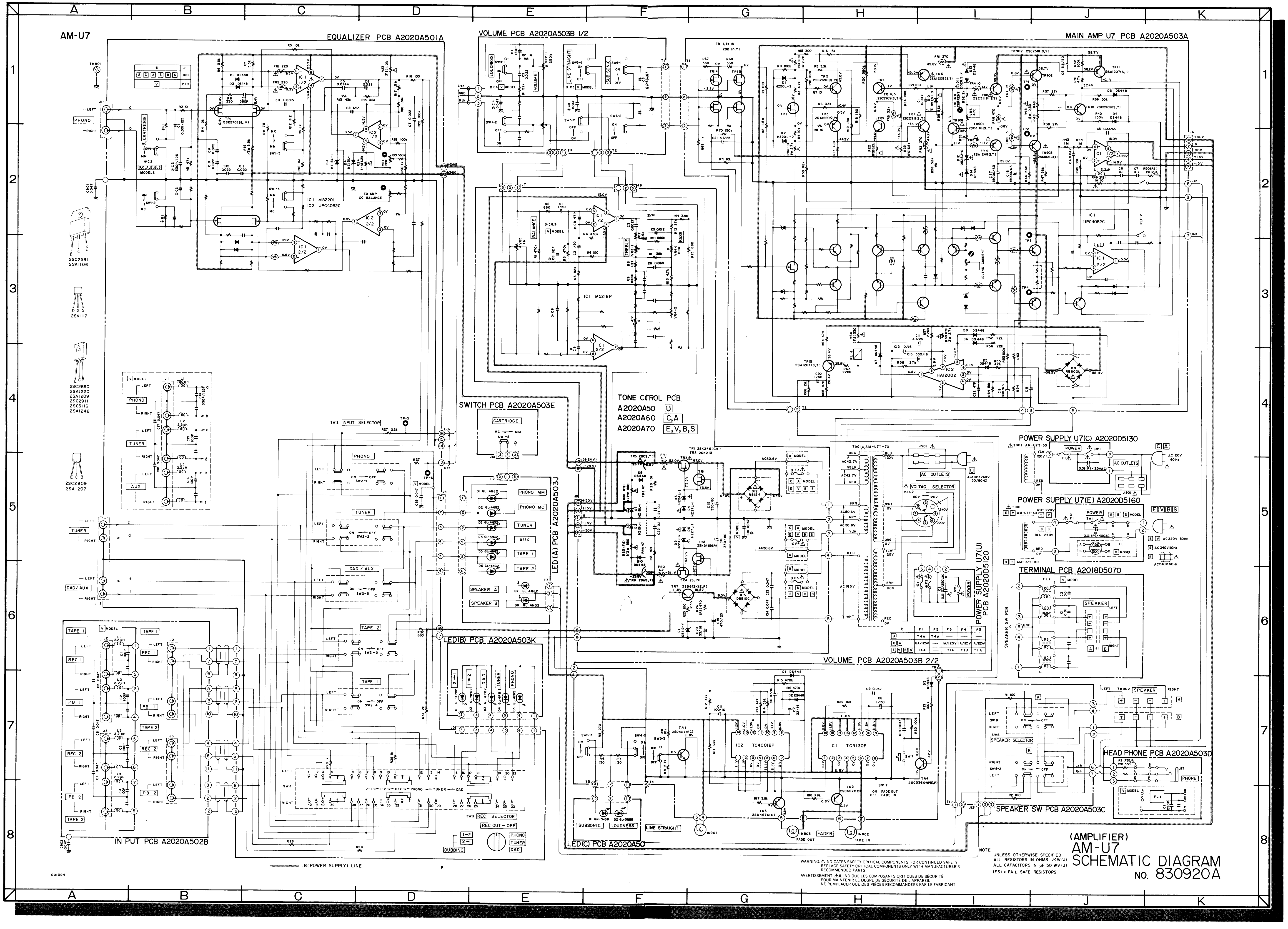

VDD
GND
SENSER & SCHMIDT TRGGER
GATE
T FLIP-FLOP
GATE
CH1
CH2
CH3
CH4
K1
K2
K3
K4
BUFFER
IN-1
IN-2
IN-3
IN-4
CS
DIS-1
OUT-1
DIS-2
OUT-2
DIS-3
OUT-3
DIS-4
OUT-4
KS

SECTION 3

SCHEMATIC DIAGRAM

TABLE OF CONTENTS

1. SCHEMATIC DIAGRAM 30
2. SCHEMATIC DIAGRAM OF ICs 31


AM-U7
EQUALIZER PCB A2020A501A
VOLUME PCB A2020A503B 1/2
MAIN AMP U7 PCB A2020A503A
TONE CONTROL PCB
A2020A50 U
A2020A60 C,A
A2020A70 E,V,B,S
SWITCH PCB A2020A503E
LED(A) PCB A2020A503J
LED(B) PCB A2020A503K
LED(C) PCB A2020A50
IN PUT PCB A2020A502B
VOLUME PCB A2020A503B 2/2
POWER SUPPLY U7(C) A2020D5130
POWER SUPPLY U7(E) A2020D5160
POWER SUPPLY U7(U) PCB A2020D5120
TERMINAL PCB A2018D5070
HEAD PHONE PCB A2020A503D
SPEAKER SW PCB A2020A503C
IC1 M5220L
IC2 UPC4082C
IC1 M5218P
IC1 UPC4082C
IC2 HA12002
IC2 TC4001BP
IC1 TC9130P
2SC2581
2SA1106
2SK117
2SC2690
2SA1220
2SA1209
2SC2911
2SC3116
2SA1248
2SC2909
2SA1207
PHONO
TUNER
DAD/AUX
TAPE 1
TAPE 2
INPUT SELECTOR
REC SELECTOR
SPEAKER SELECTOR
FADER
FADE OUT
FADE IN
=B(POWER SUPPLY) LINE
001394

NOTE

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)
(FS) = FAIL SAFE RESISTORS

(AMPLIFIER)
AM-U7
SCHEMATIC DIAGRAM
NO. 830920A